

American Gas *Association* MONTHLY

National Health and Defense

•

Promoting Certified Service

•

Gas Molds Armaments for War

•

Why Can't We Sell More Gas?

•

Lenient Collection Policies

April



1941

VOLUME XXIII NUMBER 4

They're Out!

THE 1940 A. G. A. PROCEEDINGS

"They're out!", the secretary to the chief-engineer of the great Gas Works announced to his boss, Phineus K. Smith.

"What's out?", said Mr. Smith, nervously.

"The Proceedings, of course."

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New York, N. Y.



CONTENTS FOR APRIL 1941



Headlines and by-lines these days are concerned largely with problems of national defense and the gas industry is no exception to this rule. Three articles in this issue deal directly with preparedness problems. First, we quote President Strickler's astute advice to the gas industry not to neglect sales promotion because of war hysteria. . . . Next, Miss Roberts points to the importance of good health in the nation's defense program, and shows how well-equipped are home service women to cooperate. . . . Finally, Mr. Starr deals with the real stuff—guns, armaments, and other sinews of war turned out in the latest-type gas furnaces, many of which were unheard of or undeveloped only a few years back. . . . But all this war talk hasn't stopped progressive gas companies from pursuing aggressive sales and advertising campaigns as witness the United Gas Corporation's hard-biting CP program described by T. E. Hawkins in this issue. A significant shift in emphasis from CP ranges to CP service is a cardinal point in United Gas sales philosophy. . . . For those natural gas men who want to keep ahead of the field, the natural gas convention early in May is at the top of the schedule.

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A meter reader of the Boston Consolidated Gas Company makes a record of gas service. Photographed by an employee of the company, Albert Crownfield, Jr., this picture won a \$5.00 award in the A. G. A. MONTHLY frontispiece contest.



JAMES M. BEALL, *Editor*

THE LONG VIEW

..... No Curtailment of Sales and Advertising

A LOT has been said about the gas industry's part in molding the sinews of war to protect our national security. We have heard from such experts as Franklin T. Rainey, 1940 chairman of our industrial gas section, who set forth the great progress in gas-burning equipment made since World War I. We have read with interest comparisons of our great advances in the technique of metal treating by Clayton S. Cronkright. Again, in this issue, Mr. Starr further outlines the superior gas equipment that is preparing the tools of war.

There has also been considerable discussion of employee training for emergencies, storage of vital supplies, adequate protection of gas service, prevention of sabotage, and other national defense steps.

But it remained for President Thomas J. Strickler to emphasize the importance of maintaining our present sales and advertising efforts so that our hard-won markets will not be invaded by competitors. "Not for a moment," he said, "should we sit back and allow the present course of extraordinary events to shape our destiny."

Speaking before the New England Gas Association on March 27, President Strickler said:

"As the nation rapidly moves from an economy of peace to an economy of war, it is becoming increasingly clear that we are not going to have things our own way. Every day we are learning more about the enormity of the nation's defense effort as revealed in its estimates of time, material and manpower requirements, in its charges against the income of industry and of individual taxpayers, in the stimulated construction of new plants and expansion of existing facilities, in the lush growth of administrative personnel and regulatory documentation and in the fast-occurring changes in labor circles."

"When one reviews all this he is forced to conclude that any idea of 'business as usual' is not in the cards. However, we who are in the gas business have less justification

for anxiety than those who are in many other lines of business. Our operations are vitally important in the prosecution of a program of intensified national defense and in rendering an essential service which is one of the backbones of an effective program of civil defense.

"This dual function of ours will take on added importance as the war continues. It also imposes on us the dual obligation to be ready to meet such special demands as may be imposed on us by the Government to accelerate the fabrication of the materials of war, and at the same time we must serve the homes of the nation at a high level of efficiency.

"How does it look for sales this year? The answer as I see it is that 1941 may very likely exceed the sales record of 1940, and for these reasons: Billions of dollars of new purchasing power is being created by the defense activities. Already millions of men and women have found and will continue to find gainful employment in private industry.

"In many plants, hours of work have been less than forty per week. They are now being extended. Instead of one shift, many factories are on a schedule of two and three shifts. Overtime work is already substantial and is mounting steadily. Under such conditions, you know the result—the national payroll must move sharply upward.

"We stand today on the threshold of a period of vast re-employment. Millions of persons now punching time cards have come off relief rolls. For the past several years they have been able to buy only the bare necessities. Not so from now on, however. They are right now forming opinions on what they want and the things they prefer. Add to this group the millions of persons who enter the market place each year for the first time and then add again the large number who represent good prospects for replacement business, and there you have the sales possibilities for this year.

"How much of this business are we going to land in

1941? I believe the answer to that question depends to a large extent on the frame of mind we adopt. If management succumbs to the war jitters, red ink is sure to be used instead of black ink when the annual report is written. The substitution of watchful waiting for clear-cut decisions and manifestations of fear and hysteria which are but symbols of a creeping mental paralysis can, within a shorter period than most of us suspect, put this industry from high gear into reverse. Let us guard against these poisons as we would an epidemic.

"There is a tendency in times like

these to neglect the development of normal markets because of the fear associated with boom conditions which are interpreted as being of a synthetic character. Advertising is curtailed, sales personnel reduced, new business appropriations cut. This is a serious mistake and often results in the loss of hard-won and carefully cultivated markets to more level-headed competition. The marketing function of our business must not be neglected."

As one industrial advertising manager put it: "We cannot afford to permit competition to grab our peacetime business while we are out marching in the preparedness parade."

National Survey Reveals Customer Preference for Gas Appliances

IN a survey just completed by the *Woman's Home Companion*, copies of which are available, significant facts covering the use of gas and gas appliances are revealed. General data on the use of gas, type of gas used, buying habits, types of appliances used, homemakers' preferences, and other pertinent information on gas cooking, refrigeration, water heating and house heating were obtained from 1334 reader-editors of the magazine. Of this number, 70 per cent use gas in their homes, 66 per cent cook with gas, 49 per cent use gas for heating water, 19 per cent heat their homes by gas, and 7 per cent have gas refrigerators.

The reader-editors of the *Woman's Home Companion* are a group of readers of varying ages and incomes who function as advisory editors by means of a special system of questionnaires. Living in all parts of the country, their number is weighted so as to parallel circulation coverage. Frequent checking indicates that their opinions are representative of the entire *Companion* readership.

Articles Based on Survey

Information gathered from reader-editors is given consideration in the editorial makeup of the magazine. Already, results of the gas survey are apparent. The April issue devotes a full page to information on the correct use of the gas broiler and further material gathered from the survey will be made the basis of subsequent articles.

After discussing the use of gas by geographical sections of the country, and the type of gas used, the survey tackles the question of customer satisfaction in connection with the buying of new gas appliances. In answer to a question as to whether the local gas company was helpful in the selection of the last new gas appliance bought, 38% of the 790 who replied said that they had re-

ceived help or advice and 97% of those found this help satisfactory.

A good assortment of gas appliances from which to choose was available in most communities, according to the survey. A question covering this point brought 841 affirmative answers or 96% of those who replied. Of the 790 reader-editors who indicated they had purchased gas equipment, the company from whom it was bought gave satisfactory service whenever needed in 94% of the cases.

The fact that there are many obsolete gas ranges still in use was emphasized in this study. More than 22% of the 839 reader-editors who answered were using gas ranges from 10 to 15 years old, and 5.4% had ranges more than 15 years old. The median age of the gas ranges covered in the study was six years.

Range Characteristics

Turning to the characteristics of the gas ranges in use, it was found that six per cent were CP models, 66% had automatic heat control, and 79% had a pilot light for top burners. A large majority reported simmer burners on their ranges, and 89% said they could turn all of their top burners low enough to simmer food gently.

Substantiating facts developed in the A. G. A. Home Service survey last year, it was found that many women did not use their broilers at all or used them very little. About two-thirds of those queried, do some food canning or preserving in the home. This latter varied in inverse proportion to the size of the community.

In answer to the question, "Which type of range do you like best?", 83% voted for the table top gas range in preference to the cabinet type. Expressing individual preferences for features on new ranges—"automatic heat control," "automatic time

control," "utensil storage space," and the "CP Seal" received top rating in the order named, with "light in oven" at the bottom of the list of ten features.

While only 90 of the total of 1338 respondents or 6.7% have gas refrigeration, 207 of those who do not have gas refrigeration say they have considered buying a gas refrigerator—thus indicating a favorable acceptance for this type.

The water heating study indicated that the furnace coil was used in most of the homes—29.8% of those questioned. The automatic gas water heater was a close second, with 25.7%, and the non-automatic gas heater was used in 12.3% of the cases. This part of the survey gives information on the demands for hot water in the home.

House heating figures gathered by the *Woman's Home Companion* are divided into geographical regions and reveal a preference for oil heating systems, with gas making a strong showing.

Copies of the complete survey may be secured without charge by writing to W. C. Young, *Woman's Home Companion*, 250 Park Avenue, New York, N. Y.

War Makes a Difference in British Gas Tanks

A STRANGER traveling about the English countryside these days is likely to be startled by the sight of gigantic inverted cones oddly outlined against the horizon like mammoth Chinese coolie hats. They are great flared covers which have been placed on top of many of Britain's exposed gas holders. The cone shape is designed to shed, literally, incendiary and explosive bombs which have been known to glance the surface of these covers, doing little or no damage. Without such protection, direct hits with possible explosion and destruction of vital gas reserves would have resulted.

A sharp change in the technique of camouflaging gas holders has also been noted. Instead of the fantastic zigzags, stripes, and spot paint jobs familiar during the last war, the protection of natural cover and other artifices to make the tanks imperceptible from the modern high-flying but sharp-visioned bomber have been adopted. Trees, shrubbery, vines, and even rambler roses (real and artificial) in season are being used to relieve the sharp outline of gas holders.

The top of one gas holder was fixed up to resemble a handball court with tiny fake figures placed in playing position. In some cases these changes have resulted in quite an artistic improvement. A Birmingham lady, in a recent letter to a Canadian relative, which apparently escaped the censor's scalpel, says she never knew a neighborhood "gas tank" which used to be an eyesore could be made so completely inconspicuous from the ground as well as, presumably, from the bird's-eye view.—*Public Utility Fortnightly*.

National Health . . . Home Service

Contributes to the Defense Program

THE purpose of this report is to suggest ways in which home service women in the gas industry can cooperate with the national defense program. As citizens of the United States it is our duty and desire to help our country, and as women we have a particular responsibility and opportunity to help build a stronger and healthier nation. The Community Health Education Program in Hartford, Conn., has very aptly adopted as its slogan—"The Health of the Family is the Strength of the Nation."

It has been said that "An Army travels on its stomach." It is just as important that our Second Line of Defense—the men, women and children at home, at school and in industry should be well fed with an adequate diet.

Home Service Cooperation

What home service women can do will depend upon two things, first the opportunities and local agencies with which we may cooperate, and second, the policy of our company.

Gas companies are in business to serve their local communities. Home service has always been interested in community activities, and as community groups are now becoming more health conscious, Home Service automatically will consider better balanced menus, the adequate diet, how to buy food more wisely and how to cook it better with the modern gas range because it will save food, fuel and time. It is timely to interpret our work with customers by putting the emphasis on better health, time and money saved and so do our bit in helping our nation in its defense program.

Many women who are now homemakers will enter industry. They will do full or part time work either in a defense industry or to release men for defense work. These women will be especially interested in the savings pos-

- Based on a newly completed A. G. A. Home Service Committee report, the accompanying article suggests ways in which Home Service can cooperate with the national defense program. The report was prepared by a subcommittee consisting of Jane L. Roberts, Roberts & Mander Stove Co., chairman; Lucille Hall, Michigan Consolidated Gas Co.; Jeannette Campbell, Minneapolis Gas Light Co.; and J. C. Sackman, Northern Indiana Public Service Company.

- The complete report has been printed as an Interim Bulletin of the Residential Section and can be secured from American Gas Association headquarters at 10¢ each.

sible with modern automatic gas appliances.

Other women will be interested in the automatic, time-releasing features of the modern gas range, not because it will give them freedom to play cards or a game of golf but because having it in their kitchen they can give more time to the American Red Cross, assist in a health clinic, or some other patriotic service.

Many women who now have maids may soon find that they must do their own cooking. This group particularly will appreciate modern automatic gas appliances which will save time and effort, fuel and food. This group probably has more money to spend now, for a new range, refrigerator or water heater. If the thought of such a purchase is presented as "insurance for the future" against higher prices and to insure greater convenience if they must do their own work, our service to our own companies ties in with our defense service.

We earnestly hope that all the men and women in our gas industry will look at this picture with a new and broad viewpoint, of how we may fit into this big plan.

Harriet Elliott, of the National Defense Commission, has advised women to do whatever they have been doing (if it was worth doing at all), but to do it better. Do not look for the sensational and spectacular proof of our patriotism—don't drop our home service duties to learn how to pilot an aeroplane, but just keep doing the homely every day duties that we know how to do well,—but do them better. Probably this is the hardest thing of all to do.

It has been said that home economists hold the most strategic position in national defense as well as in the utility business because they have the confidence of the homemaker, they have entré into her home, and many have years of experience.

Gas Company Facilities

The gas company has the facilities and equipment for teaching women more about food, its selection, storage in the automatic refrigerator, and preparation on modern gas ranges. It can explain the advantages of plenty of hot water from the cleanliness, better sanitation and health viewpoint.

Home service women are the most natural representatives of gas companies to carry to American homemakers the story of what the gas industry is doing to cooperate with the defense program.

One of the best illustrations of what home economists can do in a defense program is what is being done today in England. Lord Woolton, the Minister of Foods, is depending upon home service women to keep British homemakers informed about what foods are available and the best ways of preparing them in order to keep national good health at the highest possible level. He has "taken over" some of the home service women formerly employed by the London Gas and Coke Company because their training and ex-

perience makes them particularly well fitted to carry this story to British women and into their homes. When attendance at public demonstrations decreased, traveling caravans carried the story to all parts of the cities and into the villages.

The Woman's Gas Council in London issues small leaflets with timely recipes illustrated with a few comical drawings—a clever psychological touch.

Probably no calamity is so great but what some good will result. We have been emphasizing the importance of good health as a defense measure, but surely we will all agree that good health is also one of the corner stones for better living in times of peace. What our men and women will do in times of national emergency will go a long way in establishing good will and the respect of our community in the peace which is sure to come later.

How To Cooperate

Home service women can cooperate with local, county, state and federal agencies and associations which are interested in good health, better nutrition and food problems. Any work that will build up and keep up the good health of children—our nation of the future, is to be particularly recommended.

Efforts are being made by the federal government to coordinate plans under trained leaders. We quote from an editorial in the February, 1941 issue of the *Journal of Home Economics*:

"The community organization section of the Consumers' Division of the Council of National Defense has asked national organizations to suggest to state and local organizations ways in which they can work together with state and local councils of defense in the study of community needs and the use of local resources to meet these needs. Home economists may advise in these community studies and cooperate in some of the activities."

Among the types of community service suggested are:

1. Dispensing information on food and nutrition.
2. Assisting in menu planning for the school lunch, when so requested.
3. Promotion of the use of surplus

commodities by families needing and eligible to receive them. This may include demonstration of ways of using surplus commodities.

4. Interpreting home economics services for all income levels, but especially for low-income consumers. Be sure that the programs fit the people for whom they are planned. They should aid in maintaining health and physical fitness and in selecting the highest standard of living compatible with the income. Keep them safe by means of competent, professional leadership; don't worry too much about who's getting the credit.

While the cooperating groups will vary in each locality, cooperation is suggested with those most in need of as-

Where the American wage earner's dollar goes*...



*The cost of living data shown was taken from the U. S. Bureau of Labor Statistics survey of wage earners and low-salaried family expenditures covering the period 1933-1939 in the thirty-three major cities.

The SMALLEST ITEM in the Family Budget is GAS

It is easy to take Gas for granted in the home. Through every hour of the day as dependable as the rising sun gas servants in the home are at work. Among their services are cooking with the modern gas range, providing on-tap hot water with the automatic water heater, and heating the home to cozy warmth with a furnace or other type of air heater. Their services are used easily and abundantly because they are so convenient and cheap. Look at this list, showing how the wage earner's dollar is disbursed every month. The smallest cost item, right at the bottom, is gas. That bottom position has been maintained for many years here in California. Your gas rate, for example, has been cut lower and lower year after year. Since 1928, there have been five substantial cuts in the cost of gas. Is there any other item in your family budget that has been so constantly made cheaper during this period?



A forceful advertisement of the Pacific Gas and Electric Company drives home the inexpensiveness of modern gas service

sistance and through which the largest number of people can be reached. The Home Service Committee's report includes a list of suggested cooperating groups.

Home Service Activities

Many home service departments in gas companies are cooperating with local community groups and are ready and anxious to assist in fuller cooperation with the national defense program. Brief summaries in the report describe some present-day activities in the various gas companies throughout the United States. The use of surplus foods; the preparation and distribution of reliable recipes; the giving of special courses to Red Cross workers, to maids' training groups and to company employee groups; the inclusion of "Dollar Stretchers" in newspaper columns and broadcasts; cooperation with the Stamp Plan in those cities where it is in effect; offering the services of the home service auditorium to nutrition groups. Sources of subject matter in keeping up-to-date in new developments in the defense plan as it applies to nutrition are included in the report.

It is the experience of the committee that industry as a whole is just becoming aware of the many possible ways in which it can cooperate with the national defense program. In times of emergency, all must contribute and cooperate for the national cause. Home service in the gas companies is keenly aware of its position and will do its share.

Stone & Webster Founder Dies

CHARLES A. STONE, chairman of the board of Stone & Webster, Inc., New York, of which he was co-founder, died of pneumonia last month after a brief illness. He was 74 years old.

With Edwin S. Webster, a classmate at the Massachusetts Institute of Technology, Mr. Stone set up a consulting engineering business in 1889, with a capital of \$4,000, that expanded into a national organization whose services today include engineering construction for all types of industry, including the underwriting and distribution of securities and the supervision of gas, electric and transportation properties. At the time of Stone & Webster's fiftieth anniversary, on Dec. 20, 1939, the firm was supervising utilities whose annual gross earnings were more than \$64,000,000.



Selling CP Service . . . Cookery Sales Campaign Aims at New-Use Business

ON February 25, United Gas Corporation launched a three months sales campaign to sell "Certified Performance Gas Cookery" and to secure new cooking customers.

Of interest to gas companies, probably, is the background of this phrase, "Certified Performance Cookery." For it is a basic sales policy of United Gas Corporation to sell service—not just gas, not fuel, least of all, merchandise. The company holds that its actual stock in trade is comfort, convenience, economy of time and money, and all those added customer benefits that induce homemakers to use our service.

In preliminary discussions of the CP Cookery campaign, Dean A. Strickland, general sales manager, in his analysis of the company's true objectives for the campaign, pointed out this fact:

That the big job of cooking sales was to produce new-use business. This new-use business would be of two classes—"gravity" business and "plus" business.

"Gravity" business, Mr. Strickland pointed out, might be illustrated this way:

When a man moves his family into a house, one of his first acts is to call on the company and have the gas

By T. E. HAWKINS

Sales Promotion and Advertising
Manager, United Gas Corporation,
Houston, Texas

"turned on." This he does of his own accord, because he needs gas service for the uses to which he has become accustomed.

On the other hand, if the company is able to sell this new customer, or any other customer, a new or increased use of the company's service, then that is "plus" business—increased revenue for the company with the minimum of added investment and expense.

It was also brought out from a study of business secured, that some new loads had been added to our mains during recent years that did not prove as productive from a net revenue standpoint as was first thought due to the expense necessary to secure this new business.

The great objective, therefore, of the company's CP campaign—or "cooking push," as it is called—is to sell "plus" and that theme is dramatized in the campaign prospectus.

In this prospectus the company has instructed its salesmen to sell a su-

perior type of cooking service—fast, controllable top cookery, waterless cooking—precision oven baking and roasting with less meat shrinkage—and smokeless, delicious broiling. In every way, emphasis is placed on the service rather than the appliance or the "gadget."

Carrying this story further, the three months' advertising activity is divided into three units—for March, top cooking; for April, oven cooking; for May, broiling; plus the cool-kitchen appeal.

In casting about for specific information on the benefits of CP Cookery, we found precisely what we wanted in the Certified Performance Range pamphlet of the Association of Gas Appliance and Equipment Manufacturers. As a consequence, reference to the company's advertisements will reveal the fact that panels of this CP pamphlet copy were transplanted into the company's ads.

The results from a layout point of view, while not necessarily pretty, are hard-working and "two-fisted." We know, from pre-testing that they will strike home and sell service for the company. Better still, they are in step with the CP story told by the company's

dealer allies in their sale of CP ranges.

Thus, at one motion, the company wraps up its own objectives in the sale of service with the smart, effective A. G. A. copy, keys it to the current seasons, and gauges the whole to tie-in with its territory wide, continuous dealer coordination program—a move broad in effect, but careful in detail, that we believe will prove highly successful.

McCall's Magazine Award Design Completed



THE bronze plaque which will be first prize in the "McCall's Magazine" awards for gas utility home service departments has been designed and is illustrated in the accompanying picture. The awards, which will be administered by the American Gas Association, will be presented for the first time at the A. G. A. Annual Convention in Atlantic City, N. J. in October. Entries for the awards must be in the hands of the Association by August 1.

Large and small gas utility home service departments will be able to compete on an equal footing for the McCall's Magazine awards. Entrants are to submit papers of 2,000 words or less covering the work of their home service departments under five heads:

- (1) The aim of the department.
- (2) The training of personnel and sales people.
- (3) Community activities engaged in by the department.
- (4) Any increase in scope of activities in the current year over the preceding year.
- (5) Accomplishment of aim.

The gas utility home service director or

directing head of the home service department of the company in the United States or Canada, which has made, in the judgment of the Jury of Awards, the most outstanding contribution to the advancement of better living in the home through the promotion of domestic gas appliances and equipment will receive the "McCall's Magazine" award plaque as first prize, together with a check for \$100.00.

Second prize will be a framed illuminated parchment and a check for \$50.00, while the third prize each year will be a framed illuminated parchment and a check for \$25.00.

Conversion of Natural Gas Into Acetylene Studied

CONVERSION of natural gas into acetylene is one of the projects now receiving extensive study by Texas chemists, according to Dr. E. P. Schoch of the University of Texas. Speaking recently before the Texas Senate finance committee, Dr. Schoch revealed also that production of acetic acid, which is used extensively in manufacture of cellulose plastics, may be commercially attractive in the near future, using natural gas as the raw material.

"We have been working many months on our process," said Dr. Schoch, "and it is almost ready for a final test. Germany is now using a variation of this process, and we are going to test both methods and then, on making a final decision, we will be ready to go. It not only will vastly increase the use of our natural gas, but it will enable us to stop gas wastage."

Stove Manufacturer Dies

A. J. LINDEMANN, 86, founder of the A. J. Lindemann & Hoverson Company, Milwaukee, Wis., past president and chairman of the board, died March 12.

Mr. Lindemann was thoroughly versed in the technical side of the business, pioneering many innovations in stove manufacture which are standard practice in the industry today, notable among which were the use of porcelain enameled parts in stove construction and the development of the combination range.

Outstandingly civic minded, he gave considerable of his time to educational affairs; served as president of the School Board, was one of the founders of the Milwaukee Trade School, president of its special board as well as of the Continuation School Managing Board. He was vice-president of the Wisconsin State Board of Managers of the St. Louis World's Fair in 1903, director of the National Manufacturers Association, and delegate to the London First World's Power Conference at Wembley Park in 1924.

Mr. Lindemann was widely traveled, a keen observer and author of two books describing his travels.

Gas Sales Advance in New Jersey

MARKED increases in all phases of its business were registered in 1940 by Public Service Corporation of New Jersey, according to the company's annual report. Total gas sales advanced 7.71 per cent over 1939, amounting to 28,656,941,200 cubic feet. Noting that a considerable amount of the increase was due to activity in the building field, it was reported that there were more extensions of gas mains and electric lines in 1940 than in any year for the past several years.

Gas sales for building heating registered a substantial gain in 1940 over the previous years. They were 3,851,887,500 cubic feet, an increase of 30.84 per cent over 1939. Last year gas building heating installations increased 2,712, the largest gain in any one year. At the end of 1940 there were 13,332 installations heated with gas supplied from Public Service system facilities.

Sales of gas for industrial purposes in 1940 established a new record of 3,941,052,900 cubic feet, or 18.23 per cent above those of 1939. Connected industrial load added exceeded that in 1939 by 24.38 per cent.

Commercial gas sales increased 6 per cent over the previous year.

Ask Defense Data

IN an effort to secure authoritative information on the steps being taken by gas companies in this country for the protection of life and property in connection with the national defense program, the American Gas Association has distributed a questionnaire to the gas industry. This move was recommended by the Committee on National Defense, approved by the Executive Board, and delegated to the Technical Section under the chairmanship of D. P. Hartson of Pittsburgh, Pa.

All data submitted in response to the questionnaire will be held in strict confidence in the interest of the nation's defense and no information will be released concerning the reports of individual companies.

It is urged that all companies cooperate by supplying data on their companies at the earliest opportunity.

John J. Greene Dies

JOHN J. GREENE, vice-president of the Johns-Manville Sales Corporation, New York, died February 27 in Florida where he was on vacation. He was 62 years of age.

A native of England, Mr. Greene had been with Johns-Manville since 1906, starting as a salesman in Albany. He was the company member delegate of the American Gas Association.

Rotary shell nosing furnace at the Key Company, East St. Louis. Furnace is direct-fired by means of a single long flame burner firing vertically down into the furnace



Thousands upon thousands of defense products are dependent in their making upon gas—many more and to a finer degree of perfection than was possible during the last war

Tools for Defense . . . Gas Sets the Pace in Munitions Production

WE have always considered it a privilege to work with the American Gas Association on industrial heating problems and the mutual benefits resulting from this close cooperation have never been more clearly evident than today. The effort which for many years your Association has put into the promotion of industrial gas sales, the campaigns you have conducted in advertising, in research and development, and particularly the encouragement you have given industrial furnace manufacturers such as our company, have enabled you today to offer our government and the great manufacturing plants of the country, one of the most vital tools with which our weapons of National Defense must be built. That this is so undeniably true must be a great source of satisfaction to all who have had the vision and courage to keep plugging for Gas Heat in Industry.

This thought can be put into more concrete form. Our company is now working on a large volume of industrial furnace orders, mostly for the defense program. I believe that furnaces for armament represent over 90% of

By F. COLEMAN STARR
Surface Combustion Corp.,
Philadelphia, Pa.

our present productive capacity, and a great percentage of these furnaces will be heated with gas. I am not quite sure of the overall company picture but in my particular territory almost 100% of the furnaces we have sold for armament production have been gas-fired.

This does not mean that other fuels could not have done many of these jobs. But it does mean that the considered analysis of the customer and ourselves indicated the use of gas. And you may be sure that in most instances a thorough analysis has been made.

You all have known that gas is a quality fuel—not "quality" in the sense of the Rolls Royce in the automobile

field—but in the sense of its ability to produce a "quality" product. Until this present emergency you have watched and have been responsible for the gradual, healthy growth of industrial gas sales.

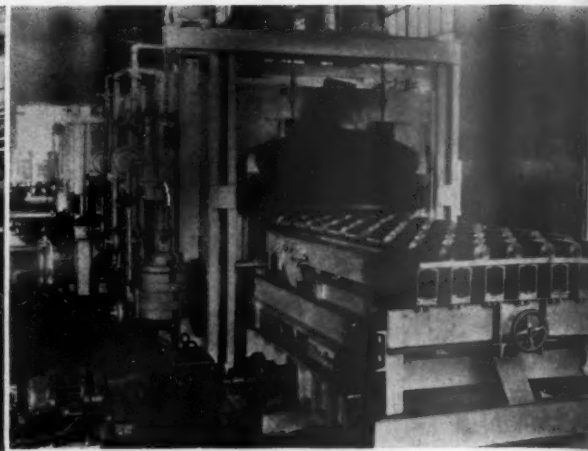
Possibly some of you have not realized the extent to which the furnace builders and their customers are now relying on your gas to meet the very pressing problems of what is almost a full war-time effort. Your Program Committee may have had this in mind when suggesting the theme of this paper.

There were two problems to consider in assembling the material to present at this meeting. The first one was that the great variety in sizes and types of furnaces, let us say for shell production alone, made it difficult to cover much of this bracket of equipment in detail in a single paper. The second problem had to do with the propriety of publishing or reading publicly too many details of design of equipment, methods of operation, heating cycles, etc., as applied to a number of our recent gas furnace installations.

This does not mean any reluctance on our part as far as our competition is concerned. It does mean that we frankly do not know just how much of



Address before A. G. A. Conference on Industrial Gas Sales, Lord Baltimore Hotel, Baltimore, Md., March 13 and 14, 1941.



The pit-type furnace on the left is used for hardening and drawing gun tubes. At right is a hardening, quench and draw unit for shells installed at the Frankfort Arsenal. Both hardening and draw furnace are equipped with a walking beam conveyor

this information should be disclosed! Nor have we been told by the Navy or Army or the munition manufacturers just how far we should go. What we can do here is to give a partial list of the operations carried out in gas-fired furnaces now in use or being built for armament production. We can also discuss one or two individual furnaces which may be interesting as representing certain groups of furnaces or types of operation.

It is possible that this somewhat condensed summary of Surface Combustion furnaces, designed primarily for heat-treating ordinance materials for both the Army and Navy, may offer an idea or suggestion which some of you in your individual territories may use to advantage. Defense contracts are still being let and heat-treating furnaces are still being purchased. These furnaces will not necessarily be gas-fired unless an intelligent effort is made and unless your industrial groups and the furnace manufacturers work together.

This list will not apply primarily or entirely to ammunition for anti-aircraft guns nor to the guns themselves. It should be understood that a shell or shell-case for a 5" anti-aircraft gun might demand the same heat treatment and same furnace equipment as 5" secondary battery ammunition for a battleship. A 3.7" or 4.5" anti-aircraft gun might take the same furnaces as an anti-tank gun.

The following list therefore covers

furnaces designed or built or under construction for guns, shell and shell cases of 5" caliber and the smaller sizes. It does not include some of the other very important industrial gas applications such as heat treatment of tools, gas carburizing of light armor, heat treatment of aircraft engine cylinders, aircraft tubing, propellers, etc., etc. All of these are properly gas-fired operations and are important in the defense program.

In bracketing the different types of furnaces necessary for the production of ammunition and guns for aerial warfare, it is possible to arrive at several general groups. These are as follows:

1. Projectile furnaces.
2. Shell case or cartridge case furnaces.
3. Gun barrel furnaces.
4. Furnaces for gun mounts, carriages, etc.

These classifications may be broken down still further into the various units needed for the processing of the material from rough stock to finished product.

Under the heading "Projectile Furnaces," we find the following heat-

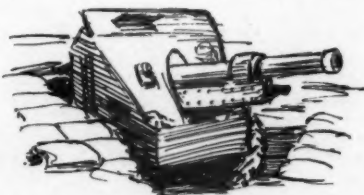
treating operations, together with the types of furnaces now in use for the particular operation.

1. Projectile forging furnaces.
 - a. Rotary.
 - b. Pusher.
 - c. Conveyor.
 - d. Batch-type (in and out).
2. Projectile nosing.
 - a. Rotary.
 - b. Batch.
3. Projectile normalizing.
 - a. Walking beam.
 - b. Pusher.
 - c. Rotary.
4. Projectile hardening and drawing.
 - a. Walking beam.
 - b. Pusher.
 - c. Rotary.
 - d. Conveyor.

When considering the cartridge or shell cases used in anti-aircraft or aircraft ammunition, we find a group of annealing furnaces of different types and sizes. Starting with a blank or cup, the piece is subjected to a series of draws and finally a nose tapering operation to form the finished case.

For instance, on one type of 37 MM shell case, there are four annealing operations before the piece is ready for tapering. There are then two heat treatments in a liquid furnace to permit tapering and mouth annealing, and finally a low temperature stress relief.

The pieces are usually water-quenched after each anneal, and this operation can be built into a continu-



ous furnace or performed in an outside quench tank in baskets or some other sort of containers.

The types of furnaces which are in use for heat-treating cartridge cases may be listed as follows:

1. Conveyor chain.
2. Conveyor flight.
3. Pusher.
4. Batch—vertical or horizontal.
5. Salt bath for tapering.

In the production of gas barrels for anti-aircraft armament, the following operations and the accompanying furnaces may be listed.

1. Forging furnaces.
 - a. Generally in-and-out batch furnaces but with sufficient production, continuous furnaces could readily be justified.
2. Quenching furnaces.
 - a. Preferably vertical pit type.
3. Draw furnaces.
 - a. Vertical or pit.
 - b. Car type—direct-fired or convection.
4. Stress relieving furnaces.
 - a. Vertical or pit.
 - b. Car type, preferably convection.

With reference to anti-aircraft gun mounts, gun carriages, bases, etc., nearly all of this equipment is built up of shapes, plates and structural members and is completely welded wherever possible. All of these assemblies have to be stress relieved and a very great percentage of the furnaces are designed for convection heating. The design and size of the furnace of course depends on the nature of the piece but the following types are in use.

- a. Pit type or vertical.
- b. Carbottom.
- c. Horizontal batch—in-and-out.

In considering the above list of furnaces it might be well to emphasize two points. First—each classification does not represent just one furnace in operation or under construction, but many furnaces, varying greatly in size and productive capacity. Second—every type of furnace listed and every heat-treating operation, with the possible exception of forging anti-aircraft gun barrels is properly a gas-fired job.

It must be repeated that some of these operations can be done and are

being done with oil or electricity. But, if the furnaces we have built and are building are any criterion, gas is the right fuel in a very great majority of cases.

Within the limits of this paper, it would, of course, be impossible to discuss the details of each of the various types of furnaces referred to above. We can, however, pick out one or two jobs which, because they combine good furnace engineering with a proper fuel application, may be of special interest to you.

Considering first the projectile furnaces, we may bracket anti-aircraft ammunition in sizes from 4.5" or 5" diameter shell down to 50 cal. machine gun bullets. For the forging or subsequent heat treatment of the larger shells in this group, we have built a number of very satisfactory gas-fired rotary furnaces. One of these furnaces for instance has the following specifications:

The outside diameter of the furnace casing is 23'. The rotating hearth is 3' wide with a mean diameter of about 17'. The hearth is built up of fire brick piers, capped with alloy plates.

This unit has a capacity of 8000 lbs. per hour of airplane engine cylinders or shells and a temperature range from 800° F. to 1800° F.

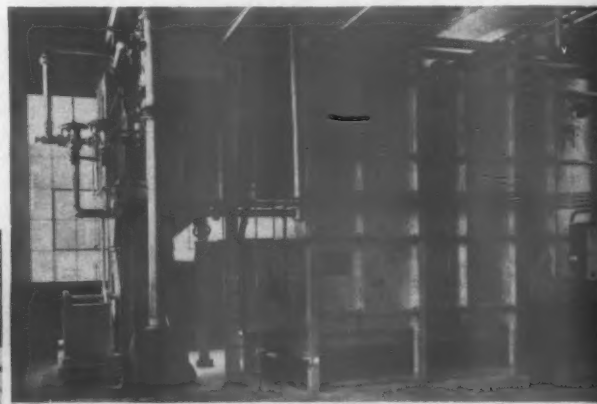
The furnace is direct-fired, over and under, with high pressure gas burners and for the lower temperature ranges, we have applied our Conjecto method of firing which insures temperature uniformity. In fact, we had to guarantee very close temperature uniformity from 800° to 1800°.

One interesting feature of this furnace is that we have eliminated seals. The furnace pressure in the three zones is automatically controlled and there is no apparent leakage of air into the furnace nor outward flow of gases, either at the full firing rate or when holding.

This furnace incidentally is in a plant where a direct comparison can be made with an electrically heated rotary unit, doing the same work. The specifications given to us on control, temperature distribution and physicals were all taken from the electric furnace practice. I am glad to report that the operating results are entirely satisfactory and so far, five of these units are in operation or under construction in this one plant.

Another type of furnace which can be adapted to cover a wide range of heating operations is the unit embodying a cast alloy belt conveyor. This unit fits into the projectile furnace group

Carbottom furnace heated by means of forced convection, used for stress relieving welded gun mounts. Below a loaded car is ready to enter the furnace



The quenching furnace is a vertical pit type unit from 25' to 30' deep and about 9' inside diameter. The gun barrels, singly or in groups of 2, 3, or 4 are hung from a special fitting or

... a FIRST requirement in Defense Production

OFFERED as a FIRST requirement in this nation's defense production:

Today the Gulf Trade is working its obligations as responsible industrial production. It is producing the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country.

Special Gas — the PERFECT INDUSTRIAL FUEL: — is offering a major role in supporting national defense. This Company's products are:

DEPENDABLE NATURAL GAS SERVICE SHOWN JUST ABOVE!

As suppliers of this third fuel, our organization, in a general way, is responsible for the production of the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country.

As our clients, you and your company are responsible for the production of the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country. It is producing the products and services that are essential to the defense of this country.

—

UNITED GAS PIPE LINE COMPANY

The smallest convection furnace we have built will take a basket about 12" x 16". The largest we have built is roughly 50' x 50' x 30' high and will handle a welded construction weighing

In closing this paper, I would like to point out that it is necessarily a very brief summary of a group of gas-fired industrial furnaces which are engaged in the production of only a small part of the Preparedness Program. Heavier guns, ammunition for these guns, tanks, bombs, torpedoes, armor plate, ships, etc., are demanding a great number of new furnaces and a great deal more gas is going to be used. I hope that this paper may be of some assistance to you in obtaining a great portion of this new load.

Community Development Ideas

Culled from members of the gas industry by the
A. G. A. Community Development Committee

The following paragraphs containing community development ideas were gathered by your committee from every part of the country. The function of the Community Development Committee concerns itself largely with the efforts put forth by gas utilities working towards the betterment of the community in which such utilities operate. It is not necessary to stress the importance of such activities; all utilities contacted were keenly aware that they may prosper only through the prosperity of their respective communities. The function of the Community Development Committee, therefore, resolves itself largely into assembling examples of community development work, rather than to stress the importance of such work. The short paragraphs appearing below are tested community development ideas. By no means are these ideas all new, but good ideas, even if old, will bear repeating. For further information on any of the activities please write directly to the originating company whose name appears in the paragraph.

Patterned after the male chorus of the Northern Indiana Public Service Company, the Citizens Gas and Coke Utility of Indianapolis, Indiana, also organized a male chorus on a somewhat smaller scale. Guided by advice from Hammond, Indiana, twenty-six members of the Citizens Gas and Coke Utility have now been practicing together for a year. Their appearances have caused much favorable comment. Here is an activity packed with good will that costs comparatively little.



From C. R. Henderson, general manager of the Michigan Consolidated Gas Company of Ann Arbor, Michigan, comes the idea of giving permission to church organizations throughout Ann Arbor to use gas company office space on the days just preceding or on the last discount day for the payment of bills for purposes of conducting bake sales. The proceeds, of course, are used by various organizations to augment their treasury funds. Mr. Henderson reports that this procedure has been carried on for quite a number of years and is very much appreciated by all the various organizations who use the space. Here again is a double-barrelled community development idea: making fund raising easy to church organizations and bringing people to the gas company office at the same time.



The Safety Director of the Louisville Gas and Electric Company of Louisville, Kentucky, actively boosts safety in Louisville. He makes about two talks a week before employees of industrial plants and in various schools, demonstrating his talks with a lot of apparatus. Such activity focuses attention on the Utility and brings with it a public appreciation of the Utility's activities as a worthwhile citizen of the community. For further information write to Robert Montgomery, vice-president in charge of sales, Louisville Gas and Electric Company, Louisville, Kentucky.

Pride in one's city is not unique to Texas but it seems to reach greater proportions there. The Amarillo Gas Company of Amarillo, Texas, spends part of its advertising appropriation on printing folders and using outdoor posters, which extol the virtues of the city, its resources, and the attractions of the surrounding territory. These folders are distributed, not just to customers, but are sent far and wide over the country. As R. E. Wertz, president of Amarillo Gas Company, modestly states: "Through our advertising we assist with many conventions which are held in Amarillo." Yes, sir, and we bet the community thinks its gas company is a great guy, too!



R. E. Fisher of the Pacific Gas and Electric Company writes: "We have produced talking moving pictures in practically all of our divisions. These pictures have been developed with a minimum of Pacific Gas and Electric Company information and with the idea of showing the industrial, agricultural, scenic, recreational, and educational advantages of these areas. These films have

This is the sixth of a series of articles appearing in the Monthly dealing with community development activities. Under the chairmanship of H. C. Thuerk, general manager of sales, The Utility Management Corporation, New York, New York, the Community Development Committee herewith presents a variety of tested community development ideas that may be used by large or small companies.

Your own experiences are solicited. Write to American Gas Association Headquarters or direct to the Committee's Editorial Board: G. A. Saas, Citizens Gas and Coke Utility, Indianapolis, Indiana or John H. Warden, Oklahoma Natural Gas Company, Tulsa, Oklahoma.

been in constant demand for showing before service clubs, business associations, farm bureaus, and educational groups. They have been very instrumental in keeping these groups informed as to the advantages they enjoy in working and living in this area and have made some contribution to civic and regional pride." Mr. Fisher also states that two new industrial films are in production now, designed to acquaint audiences with the kind, type, and extent of operation of local industries. This form of activity, seems to us, is an excellent way to boost civic pride and thereby increase word of mouth advertising that contributes so largely to growth of any community. We can well finish this paragraph with another quote from Mr. Fisher's letter: "We believe these films will be a contribution toward renewed confidence in the industrial possibilities of this area and as such, a benefit to the public generally." Right you are, Mr. Fisher, and thanks for your contribution.



James F. Pollard, president of the Seattle Gas Company, sends in a little different wrinkle on the use of a Home Service auditorium. In addition to making available the Home Service auditorium to groups and clubs, Mr. Pollard's Home Service Department will also serve a meal (his auditorium will accommodate about 50 people) at a charge of ten cents per plate, which cost just about covers laundry and dishwashing. Now to quote from Mr. Pollard's letter: "Most of these clubs charge their own members from 35c to 50c a plate and use the surplus to swell their club treasury. The food utilized is donated in large part by wholesalers, to whom credit is given, and a brief talk is made by our Home Service Department about the gas appliances utilized in preparing the luncheon. After lunch the auditorium is turned over to the group who either play cards or have other group meeting programs such as they may desire." Mr. Pollard is certainly reaching his audience through the one sure path to success: by way of the stomach.



From E. C. Joulilian, president of the Consolidated Gas Utilities Corporation of Oklahoma City, Oklahoma, comes evidence of rural community development cooperation by the gas company. Mr. Joulilian's properties take active interest and assist in livestock shows, 4-H Club programs, etc. Building the wealth of the surrounding agricultural territory, the gas company is certainly helping its communities while at the same time helping itself.



H. D. Hancock



T. J. Strickler



W. E. Derwent



D. A. Hulcy



R. A. Hornby



John T. Graves II

Natural Gas . . . Convention Headlines

Thirty-Sixth Annual Natural Gas Convention, American Gas Association
Adolphus and Baker Hotels, Dallas, Texas, May 5, 6 and 7

*Hark! 'tis ringing down the street;
And the archways and the pavement
Bear the sound of hurrying feet.*

WITH apologies to a Scotch poet of the 19th Century who could not know that all roads lead to Dallas, Texas in 1941 and that the hurrying feet are on their way to the Natural Gas Convention. The reason—a fine record of programs in the past and the promise of an even greater one this year. There is real meat in the 1941 program. Judge for yourself in the accompanying sample.

The South is irresistible! Hustling, hospitable Dallas is ready to prove it to natural gas men who will receive a fine welcome there in May. Entertainment at the Convention is planned to put you in a "South-of-the-Border" mood with serenading musicians in wide sombreros and while you are in that mood you will want to travel on down to Mexico City. An all-arranged, inexpensive tour is taking Convention guests there for a visit that will carry you back to the days of Moctezuma, show you the beauties of modern Mexico and return you to San Francisco, St. Louis or New York before your desk has had a chance to pile up.

GENERAL SESSIONS

Presiding: H. D. Hancock, Chairman, Natural Gas Section and President, Gas Advisers, Inc., New York, N. Y.

Address of Welcome

D. A. Hulcy, President, Lone Star Gas System, Dallas, Texas.

Chairman's Address, H. D. Hancock.

Address by President of American Gas Association

T. J. Strickler, Vice-President and General Manager, Kansas City Gas Company, Kansas City, Mo.

The Fast-Growing Natural Gas Industry— Alexander Forward, Managing Director, American Gas Association, New York, N. Y.

Address by W. E. Derwent, President, Association of Gas Appliance and Equipment Manufacturers and Vice-President, Geo. D. Roper Corporation, Rockford, Ill.

Some Aspects of Health and Safety in the Gas Industry— Dr. R. R. Sayers, Director, U. S. Bureau of Mines, Washington, D. C.

The Responsibility of Sales While Under the Ether— Robert A. Hornby, Vice-President, Pacific Lighting Corporation, San Francisco, Calif.

LUNCHEONS

General Sessions

John Temple Graves II, Editor, *The Birmingham Age-Herald*, Birmingham, Ala., and others.

Industrial and Commercial Sales Luncheon

*Topic—*What Methods Can Be Effectively Used in Co-operating with Your Chamber of Commerce and Similar Organizations.

Additional Committee Round-table Luncheons on Accident Prevention, Accounting, Home Service and Residential Sales.

TRANSMISSION

Presiding: Julian L. Foster, Chairman, Transmission Committee, Natural Gas Section and General Superintendent, Lone Star Gas Company, Dallas, Texas.

Methods of Maintaining High Pipe Line Flow Efficiency

William F. Ferguson, Gas Measurement Engineer, Canadian River Gas Company, Amarillo, Texas.

Weather Prophecy

B. M. Lulhere, Technical Supervisor, Southern California Gas Company, Los Angeles, Calif.

Effect of Compressibility Factor on Horse Power Requirements in High Compression. (Above 1000 lbs. per square inch)

C. Lambert Moore, El Paso Natural Gas Company, El Paso, Texas.

Progress in Liquefaction and Regasification of Natural Gas Processes

John A. Clark, Hope Natural Gas Company, Clarksburg, West Va.

Dallas—Brilliant at Night





F. X. Mettenet



C. E. Bennett



Julian L. Foster



F. M. Rosenkrans



E. L. Rawlins



H. Carl Wolf

Metalizing

Walter Garner, Lone Star Gas Company, Dallas, Texas.

Symposium on Modern Compressor Station Design

C. S. Kenworthy, Natural Gas Pipe Line Co. of America, Chicago, Ill.

H. P. George, Southern California Gas Company, Los Angeles, Calif.

O. H. Moore, Lone Star Gas Co., Dallas, Texas.

T. H. Kerr, The Ohio Fuel Gas Co., Columbus, Ohio.

H. W. Shubring, Northern Natural Gas Co., Omaha, Neb.

Paul F. Marx, Northern Natural Gas.

J. T. Innis, Northern Natural Gas Co.

American Welding Society Report on Welded Fittings

E. R. Seabloom, Supervising Engineer, Crane Company, Research and Development Laboratories, Chicago, Ill.

The Doctor Calls on a Pipe Line

Robert D. McClintock and Charles Abbot, Colorado Interstate Gas Company, Colorado Springs, Colo.

M. V. Burlingame, Natural Gas Pipe Line Co. of America, Chicago, Ill.—Discussor.

Pipe Line Flow Calculations

P. McDonald Biddison, Consulting Engineer, Dallas, Texas.

Discussed by:

R. A. Ransom, Engineer, Panhandle Eastern Pipe Line Company, New York, N. Y.

Pipe Line Flow Calculator

C. F. DeMey, The Ohio Fuel Gas Co., Columbus, Ohio.

Improvements and Use of Pipe Line Construction Equipment

S. D. Bechtel, W. A. Bechtel Company, San Francisco, Calif.

East Texas Gas and Oil Field

Air Conditioning Exhibit

A special feature of the Natural Gas Convention will be an exhibit of gas summer air conditioning equipment at the Baker Hotel in Dallas. The exhibit will include the latest developments in this fast-growing gas industry market. It will be open from Sunday, May 4, at 2:30 P.M., until the close of the convention on May 7.

Among those who will take part in the exhibit are: The Surface Combustion Corporation, Toledo, Ohio; The Bryant Heater Co., Cleveland, Ohio; Servel, Inc., Evansville, Ind.; Williams Oil-O-Matic Heating Corp., Bloomington, Ill.; and the Mills Novelty Co., Chicago.

PRODUCTION

Presiding: E. L. Rawlins, Chairman, Production Committee, Natural Gas Section and Supt. Production Engineering, Union Producing Company, Shreveport, La.

Symposium on Shooting and Acidizing of Wells.

1. Experience in Texas Panhandle and Hugoton Fields, Kansas

J. M. Hanley, Prod. Engineer, Northern Natural Gas Co., Omaha, Neb.

2. Experience in Louisiana, particularly Monroe Field

3. Experience in Eastern States

J. J. Schmidt, Field Supt., The East Ohio Gas Company, Cleveland, Ohio.
Coleman Hunter, Geologist, Kentucky-West Virginia Gas Co., Ashland, Ky.
William E. Snee, Independent Producer, West Elizabeth, Pa.

4. Open Discussion

Deposition of Salt in Producing Formations

Harry C. Walton, Republic Natural Gas Co., Hugoton, Kansas.

Completion of Gas Wells Through Producing Pay to Obtain Data for Reserve Estimates, Etc.

J. G. Dickinson, Gen. Supt. of Production, Texoma Natural Gas Company, Amarillo,

Texas and

Dr. Eugene A. Stephenson, University of Kansas, Lawrence, Kansas.

Cathodic Protection as a Possible Means for Preventing Corrosion of Gas Well Casing

W. E. Huddleston, Cities Service Gas Company, Bartlesville, Okla.

Report From Bureau of Mines on Gas Well Delivery Study

C. K. Eilerts, Bureau of Mines, Bartlesville, Okla.

RESIDENTIAL GAS SALES

Presiding: F. M. Rosenkrans, Chairman, Residential Gas Sales Committee and New Business Manager, The Gas Service Company, Kansas City, Mo.

Symposium: Executive Responsibility for Sales From a Metropolitan Company

F. X. Mettenet, B. N. Wittmann, M. F. Boss, J. Parfitt, The Peoples Gas Light & Coke Company, Chicago, Ill.

Executive Responsibility for Sales from a Company Having Inside and Outside Service Areas

E. J. Stern, Vice-President, Public Utilities Corporation, Atlanta, Ga.

Cavalcade of Gas

Master of Ceremonies, E. C. Sorby, Sales Promotional Director, George D. Roper Corp., Rockford, Ill.

House Heating Presentation

J. G. Tooker, Gas Service Company, Wichita, Kansas

Water Heating Presentation

J. H. Warden, Oklahoma Natural Gas Co., Tulsa, Okla.

Refrigeration

E. P. Fleischi.

INDUSTRIAL AND COMMERCIAL GAS SALES

Presiding: H. Carl Wolf, Chairman, Industrial and Commercial Gas Section and President, Atlanta Gas Light Company, Atlanta, Ga.

What's Happening in the Gas Engine Field From the Technical Angle—Manley H. Clark, Southern Counties Gas Company, Los Angeles, Calif.

From the Business Promotion Angle—
A. L. Boehm, The Peoples Gas Light & Coke Co., Chicago, Ill.

Progress Report on A. G. A. Boiler Installation Code

L. S. Reagan, The Webster Engineering Co., Tulsa, Okla.

Year 'Round Air Conditioning and Commercial Refrigeration—New Equipment That Builds Gas Load and Customer Appreciation

John K. Knighton, Servel, Inc., Evansville, Ind.

What Controls on Your Installation Mean to Your Customers and to You (Boilers)

A. C. Grant, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

The Part Natural Gas is Playing in National Defense

W. B. Head, Asst. to Vice-President and General Manager, United Gas Corporation, Houston, Texas.

Wind-Up Talk, Where? From Here—And How?

H. Carl Wolf, Chairman, Industrial and Commercial Gas Section and President, Atlanta Gas Light Company, Atlanta, Ga.

Symposium on Natural Gas in the Larger Heating Operations

Ceramics—D. D. Beach, Macon Gas Company, Macon, Ga.

Metal Industries—George M. Parker, Mississippi River Fuel Corp., St. Louis, Mo.

Refineries—Frank S. Kelly, Arkansas Louisiana Gas Company, Shreveport, La.

Railroads—D. W. Reeves, Oklahoma Natural Gas Company, Tulsa, Okla.

Power Plants—George V. Roland.

ACCIDENT PREVENTION

Presiding: W. H. Adams, Chairman, Subcommittee on Accident Prevention, Natural Gas Section and Safety Director, The Manufacturers Light and Heat Co., Pittsburgh, Pa.

Panel Discussion: How to Instill and Maintain a Greater Interest in Accident Prevention

Chairman: James R. D. Eddy, Director, Dept. of Vocational Education, Austin, Texas.

Executive Representative: C. E. Bennett, President, The Manufacturers Light and Heat Company, Pittsburgh, Pa.

Foreman Representative: Ralph Shipp, Chief Engineer, The Lone Star Gas Company, Dallas, Texas.

Employee Representative: Floyd Callison, Oklahoma Natural Gas Company, Okmulgee, Okla.

Insurance Representative: Hon. J. P. Gibbs, Casualty Insurance Commissioner, Austin, Texas.

Fires and Causes of Explosions in the Gas Industry and Some Means of Extinguishing and Prevention

G. M. Kintz, District Engineer, United States Bureau of Mines, Dallas, Texas.

The Right Man in the Right Place

W. R. Davis, Asst. Personnel Mgr., Southern California Gas Company, Los Angeles, Calif.

Protection of Utility Property Against Sabotage

A. P. Kitchin, Special Agent, Federal Bureau of Investigation, U. S. Department of Justice, Dallas, Texas.

No Convention Exhibit

THE board of directors of the Association of Gas Appliance and Equipment Manufacturers at a meeting on March 18, having given every due consideration to present conditions and to the trends as they may affect general business, resolved that it is inadvisable to hold an exhibition of gas appliances and equipment this year in conjunction with the American Gas Association Convention.

The American Gas Association concurred in this decision at its executive board meeting on March 19.

Thomas R. Weymouth Retires April 1, Natural Gas Research Leader



T. R. Weymouth

THOMAS R. WEYMOUTH, vice-president of the Columbia Gas & Electric Corporation and an outstanding figure in the natural gas industry for many years, retired from active service on April 1. Recognized throughout the industry as one of its most capable engineers, Mr. Weymouth has been a leader of organized research activities and has made many contributions of vital importance to the industry's progress.

Born on March 16, 1876 at Lock Haven, Pa., Mr. Weymouth graduated from Massachusetts Institute of Technology in 1897. His interest in the natural gas industry began in 1903 when he became assistant engineer for the National Transit Company, Oil City, Pa. His duties involved engineering work with various gas companies; and in 1911 he joined the United Natural Gas Co., Oil City, as assistant engineer, was soon made chief engineer and later was also chief engineer for the Pennsylvania Gas Company, Warren, Pa.

In 1923 he became president of the Iroquois Gas Corporation, the Iroquois Building Corp., and the Snyder Natural Gas Company, Buffalo, N. Y. Five years later, in 1928, Mr. Weymouth went to Tulsa, Okla., as president of the Oklahoma Natural Gas Corporation and the American Natural Gas Company where he remained until 1930 when he joined the Columbia Gas & Electric Corporation as vice-president in charge of operations.

Mr. Weymouth was a member of the Natural Gas Association of America since 1911, and, since its merger, a member of the American Gas Association, serving as chairman of the Natural Gas Section in 1938-1939. As a member of the Main

Technical and Research Committee and chairman of the Subcommittee on Gas Measurement, he has made valuable contributions to this group's research program.

In 1920 Mr. Weymouth was consulting engineer for the Public Utilities Commission of Alberta, Canada, in one of its cases and was a member of the arbitration commission for the adjustment of the rates of the Canadian Western Natural Gas Light, Heat & Power Company.

While in Oil City, Mr. Weymouth carried on research on the pitot tube for measuring gas, and also on the orifice meter and established the first coefficient which was used in the Foxboro meter for many years until the Gas Measurement Committee report was issued after a ten-year research program.

He conducted experimental work to determine the deviations from Boyle's Law, and carried on research on the extraction of gasoline from natural gas, cooperating with Col. George A. Burrell in the development of the process for extraction of gasoline by means of activated charcoal.

Mr. Weymouth also has done research work on the underground storage of natural gas; in fact worked on some of the earliest experiments. He has made studies of the compression of natural gas to establish empirical formulas for the computation of the horse power required for such compression and invented a number of devices for the computation of gas flow through orifice meters, including a square root planimeter without cams, and a compound integrator. He is author of the Weymouth Formula for computing the flow of gas in pipe lines.

Mr. Weymouth will probably devote a considerable portion of his free time to the various hobbies in which he is keenly interested. He is an enthusiastic golfer, a candid camera addict, models in clay, and thoroughly enjoys sailing on Lake Chautauqua, N. Y., where his summer home is situated.

Personal AND OTHERWISE

Utility Man Named on Defense Committee



W. Cullen Morris

Mr. Morris was appointed as a representative of the American Gas Association. He is a member of the Association's Committee on National Defense.

Membership in this special body, called the National Technological Civil Protection Committee, is made up principally of representatives of recognized engineering organizations and societies. Walter D. Binger of the American Society of Civil Engineers is chairman.

Mystery Chef's Program is Extended



The Mystery Chef

East. The new station set-up as of the above date is WEAU, New York, Wednesday and Friday mornings, 9:45 to 10 o'clock; KYW, Philadelphia, Wednesday and Friday mornings, 9:30 to 9:45 o'clock; and KDKA, Pittsburgh, Tuesday and Thursday mornings, 11:45 to 12 o'clock.

In each of his broadcasts the Chef offers his cook book, "Be An Artist At the Gas Range" for twenty-five cents and the top of one or more packages of Tetley Tea. The

cook book still includes on each page the original references to the special advantages of gas for cooking, water heating, refrigeration and house heating, and thus represents a valuable promotional vehicle for the gas industry. More than 2,500,000 copies of this booklet were used by the gas companies who sponsored broadcasts by the Chef under the auspices of Regional Advertisers, Inc. The demand for the book under the sponsorship of Tetley Tea has been so large that another printing is being contemplated.

United Gas Announces Executive Promotions



J. V. Strange

since 1930. He has been an active member of the American Gas Association for many years and is now serving on the Association's Committee on National Advertising.

Mr. Strange announced that K. L. Simons, manager of the Houston division of the company, has been made vice-president; and H. P. Carroll, former general superintendent, has been appointed operating manager.

Awarded McCarter Medal

EDWARD L. ERHART, meter reader in the controller's department of The Philadelphia Gas Works Company, recently received a McCarter medal for prompt and effective action in life saving by the Schafer prone pressure method of resuscitation. Mr. Erhart had rescued a woman who had been overcome by gas and his efforts were judged worthy of this high honor.

Presentation of the medal was made by H. W. Reed, executive vice-president of the company in the presence of staff members. T. S. Lever, controller, read the citation which commended Mr. Erhart's outstanding act.

Retired Natural Gas Executive Dies



George W. Ratcliffe

GEORGE W. RATCLIFFE, retired president of the Manufacturers Light and Heat Company of Pittsburgh, Pa., and a leader in the natural gas industry for 38 years, died at West Palm Beach, Florida, on March 20.

Born in Buffalo, N. Y., Mr. Ratcliffe's first position in

Pittsburgh was with the Peoples Natural Gas Co., and in 1910 he became auditor for the Manufacturers Light and Heat Company. He was also treasurer of the Ohio Fuel Corp. of which Manufacturers became a part.

When Ohio Fuel was merged with Columbia, Mr. Ratcliffe was made president of the Pittsburgh group, which included the following: Cumberland & Allegheny Gas Co., Fayette County Gas Co., Gettysburg Gas Corporation, Greensboro Gas Company, Manufacturers Gas Company, Manufacturers Light and Heat Company, Natural Gas Company of West Virginia, and Pennsylvania Fuel Supply Company.

He had been active in the affairs of various gas and oil associations, and in 1932-33 was chairman of the Natural Gas Department of the American Gas Association.

Henry S. Battin Dies

HENRY S. BATTIN, who had been an executive with The United Gas Improvement Company for many years, died on Friday, March 14, in a hospital in Miami, Florida. He had been retired from U.G.I. employ since March 1, 1929, and would have been 81 years of age on April 6.

At the time of his retirement, he was executive assistant to the general superintendent of U.G.I., having started with that company in 1898.

Mr. Battin came from a family that had been identified continuously with the gas industry since 1844. His grandfather, Joseph Battin, built the Albany (New York) Gas Works during that year, being at the time one of the few builders of gas works in the United States. Joseph Battin also built the gas works at Syracuse, N. Y., Charleston, S. C., Patterson, N. J., Elizabeth, N. J., and Scranton, Pa.

Mr. Battin's father was superintendent of the Scranton Gas and Water Company for a number of years, and Mr. Battin's first work in the gas business was with that company. From there, he went to Chicago in 1883, where at that time they had one of the largest carburetted water gas plants in the country. He went to U.G.I. directly from Chicago in 1898.

He is survived by two sons, Henry W. and George.

Sales Leaders of Another Day



More than 25 years ago, in 1913 or 1914, this group picture of the directors of the old National Commercial Gas Association was taken. One of the predecessors of the American Gas Association, this organization was responsible for focussing attention on the importance of the sales and new business departments in the gas industry. Hidebound and outworn sales methods soon went out of vogue along with the bowler hats and stiff collars.

Left to right: Charles L. Holman, president, Laclede Gas Light Co., St. Louis; unidentified; Thomas R. Elcock, advertising manager, The United Gas Improvement Co.; Louis Stotz, secretary, National Commercial Gas Association; Joseph E. Mayer, new business manager, The Peoples Gas Light & Coke Co., Chicago; George Thompson, new business manager, American Gas Co., Chester, Pa.; Harry D. Schall, vice-president, Detroit Stove Co.; Alonzo P. Ewing, new business manager, Detroit City Gas Co.; and L. F. Blyler, new business manager, Minneapolis Gas Light Co.

British Gas Men Honored for Gallantry

THE George Medal recently established by King George VI for exceptional gallantry has been awarded to John Grayston, engineer and manager, and B. V. Poole, shift foreman, both with the Romford Gas Company in England.

Fragments of bombs had penetrated a number of gasholders, and escaping gas ignited. Unconsumed gas was escaping from other fractures.

These two men ran the gauntlet over a blazing timber platform 15 ft. above the ground, and closed the main inlet and outlet valves of the damaged purifiers. By this time their clothes were on fire.

Another gasholder was pierced in over twenty places, but Mr. Grayston and two laborers, working from ladders, finally extinguished ignited gas and stopped leaks. Mr. Grayston fell into the tank of the large holder and was dragged out by a workman.

All night they worked on repairs while German bombers droned overhead, bombs fell and gunfire was incessant.

For an outstanding act of courage the George Medal has also been awarded to Charles Taylor a valveman employed by the Sheffield and District Gas Company. An incendiary bomb dropped on the crown of

a gasholder and Mr. Taylor climbed 45 ft. while bombs were still falling. The bomb had punctured the sheeting and gas was burning at the hole. Going down again for assistance, Taylor returned and almost extinguished the flame with clay.

When the clay supply was exhausted he went down again for more and was successful in putting out the blaze. He then put out another incendiary bomb and then found that the crown of another holder was punctured by an incendiary and the gas issuing from the hole was on fire.

Although this crown was 60 ft. from ground level, he extinguished the fire with help and plugged the hole.

Frank Wilson, foreman in charge for the Salford Gas Department climbed to the top of an incendiary-bomb-fired gasholder with L. D. R. Jones, acting chief works superintendent, and William Dawson, the engine-man, and put out the flames, which were flaring up to a height of 20 ft.

The three men carried hosepipes to the top of the holder and played water on the redhot plates surrounding the hole. As soon as the water had sufficiently cooled the plates they put clay around the hole and stopped the fire. During the whole of

these operations there was very intensive aerial activity.

For that Mr. Wilson has been awarded the medal of the Order of the British Empire, and Mr. Jones and Mr. Dawson have both been commended for their work.

Thomson Wins Award for Sales Ability

AWARD of the annual Portland Gas & Coke Company commercial manager's medal to Leslie E. Thomson, district agent at Newberg, Oregon, was made at the company's annual sales conference in Portland on February 24 and 25. John J. Winn, Jr., commercial manager, who established the award in 1938, made the presentation.

The winner, selected by district managers and Portland sales supervisors, is determined on a basis of improvement in sales ability as well as the individual's increased all-around value to his company and the community.

Expand Stoker Campaign for Heating Market

TAKING their cue from the gas industry, the coal producers throughout the Southwest area are greatly expanding their advertising and sales promotion activities designed to secure the automatic heating business. Aimed particularly at fighting gas competition, the campaign to sell stoker heating will revolve around a new technique in coal advertising which has been developed during a two-year test campaign in Kansas City, Mo., according to W. E. Blucher, secretary of the Bituminous Coal Utilization Committee for Kansas, Missouri and Oklahoma, which organization is conducting the campaign.

"Previous to 1939," Mr. Blucher pointed out in *Advertising Age*, "coal producers tried campaigns advertising coal as the 'economical fuel,' and used efforts built around the value of the industry to the area from a tax, number of employees, and wages standpoint. But these campaigns were utter failures as far as increasing sales volume was concerned.

"Then late in 1938, we hit upon the idea of advertising coal not as coal, but as automatic coal stoker heat. Certainly, we took this lesson from the gas utilities. We learned to advertise not what it is, but what can be accomplished with it. We coal men advertise stokers instead of coal, now, to sell the latter."

Mr. Blucher's committee will spend \$30,000 for advertising in 1941. Plans include large scale educational clinics for both dealers and stoker prospects.

Of course, as the "Rough Proofs" column of *Advertising Age* pointed out in a later issue, "They'll have the problem licked just as soon as some stoker manufacturer develops an ash-carry-outer attachment."

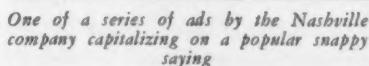
The acceleration of industry and commerce is reflected in the 12.2 per cent in-

The sale of gas appliances in the Pacific Coast states increased substantially in all classifications. Gas ranges increased approximately 14 per cent during 1940 over 1939, gas water heaters 21 per cent, central heating jobs 6 per cent and space heaters, including floor furnaces, 11 per cent. Most of the gains were recorded in California and Arizona, although the northwest held about even in ranges and water heaters and gained 14 per cent in heating sales.

Or is it?

The days passed. Ears remained glued to the radio. Surprise turned to analysis of the situation. A third g.c.e. decided that the expression "as used" certainly did not represent what you might call good taste on the part of the coffee firm (sponsor).

Meantime, the industry's advertising agency started sleuthing. A story was composed and dispatched post haste to newspaper editors—smack on the city desks, in fact—all about the interesting origination, revival and survival of various expressions, and conspicuously pointing to the current



"The sensitivity of the machine," he said, "is such that it can detect a leakage of as little as one cubic foot of such hydrocarbon gas a square mile a year."

MRS. CHARLES E. GALLAGHER, wife of the chairman of the board of The East Ohio Gas Company, Cleveland, was fatally injured on March 5 in an automobile collision. Surviving Mrs. Gallagher are her husband and two daughters, Doclie and Eugenia.

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Pacific Coast Gas Industry Gains

DURING 1940 the Pacific Coast gas industry connected 86,000 new customers to its lines. Gas sales were 3.5 per cent greater than in 1939 and 7.7 per cent greater than in 1930. Annual revenue increased only one-half of one per cent, thus indicating gas continues its downward price trend. Because of the phenomenally warm Fall and Winter domestic sales, including gas for house heating, increased only 2.7 per cent.

The acceleration of industry and commerce is reflected in the 12.2 per cent in-

crease in commercial and industrial sales. This was offset partially by a 34.9 per cent decrease in gas used in electrical generating plants; the heavy rainfall permitting a larger than usual share of power to be generated in hydro plants.

The sale of gas appliances in the Pacific Coast states increased substantially in all classifications. Gas ranges increased approximately 14 per cent during 1940 over 1939, gas water heaters 21 per cent, central heating jobs 6 per cent and space heaters, including floor furnaces, 11 per cent. Most of the gains were recorded in California and Arizona, although the northwest held about even in ranges and water heaters and gained 14 per cent in heating sales.

Now You're Cooking with Gas!

LOOKS like you can't keep a good saying down, if it can possibly be proved useful to anyone at any time—typical of the opportunistic American. The expression "NOW YOU'RE COOKING WITH GAS" has bobbed up again—this time as a front page streamer on the Roper Ranger, and as the banner line in the current advertising series of the Nashville (Tenn.) Gas and Heating Company, cleverly tying gas cooking to local food products and restaurants.

"Now you're cooking with gas" literally took the gas industry by the ears around December 1939—Remember?—when it flashed forth in brilliant repartee from the radio programs of the Maxwell Coffee Hour, Jack Benny, Chase and Sanborn, Johnson Wax, Bob Hope and sundry others. Gas men began to listen as they had never listened before, kinda hoping to hear more, yet not knowing whether to be glad or mad, dazed or dazzled by such widespread FREE publicity on TIME interpreted in terms of national hook-ups involving hundreds of thousands of dollars all told.

Homemaker Protests

Curiously, an eastern homemaker was first to voice a protest—and take pen in hand to address headquarters (the A. G. A.). She resented the remark, she said; being a confirmed cooker with gas because she could SEE what she was doing, and considering herself modern, the slogan could only be construed as uncomplimentary in its inference and insinuation. She didn't want to be called out-of-date by "hams" and she did not mean the kind used in cooking.

Four days later came a missive from a gas company executive expressing curiosity to know "just what it was all about" but concluding that "somebody has apparently been right on the job." Another g.c.e. figured "the swell idea" was fostered by the A. G. A.

The days passed. Ears remained glued to the radio. Surprise turned to analysis of the situation. A third g.c.e. decided that the expression "as used" certainly did not represent what you might call good taste on the part of the coffee firm (sponsor),

seeing as how perhaps all of 90% of the coffee had been roasted by gas, etc.

Another bulletin was bulletined from the eastern homemaker that NOW Baby Snooks was cooking with gas—and, loyal to the last, she finished "but I STILL don't like it." More correspondence followed and when she was apprised that this free publicity was not considered unfavorable by the gas men, she concluded perhaps she had been wrong.

Meantime, the industry's advertising agency started sleuthing. A story was composed and dispatched post haste to newspaper editors—smack on the city desks, in fact—all about the interesting origination, revival and survival of various expressions, and conspicuously pointing to the current

rage of "Now you're cooking with gas" on the air waves. The Los Angeles office buttonholed script writers of the Good News Hour only to learn that one of them just happened to hear the expression, thought it was clever, and stuck it in. The research department delved deep into archives and brought forth the information that this was an old expression used by travelling theatrical people—it was their lingo for playing the big time—where gas was available for cooking, instead of just coal or wood.

Thus ended the first episode of "Now You're Cooking With Gas." And that was that! Everyone settled down for the duration . . . (denoting the passage of time). Came the dawn of January 15, 1941! On the comic page of *The New York Daily News*, the strip titled "Smilin' Jack" started a mythical contest for cooking and darning—reviving—of ALL things—"an' cookin' with gas."

By February, the strip artist of "Terry And The Pirates" sensed the possibilities in competition and used the tag line "now you're cooking with electricity!"

Such is the reward of success—it leads on to imitators!

Just the same, any gas man will tell you that—now, 16,910,000 wimmin 're cookin' with gas! And that's PUHLENTY!

Or is it?

New Geochemical Gas-Detecting Method

A NEW geochemical prospecting method for oil and gas fields, known as geodynamic process, was described by Sylvain Pirson, associate professor of the petroleum and natural gas department of the Pennsylvania State College at a recent meeting of the American Institute of Mining and Metallurgical Engineers.

"It is a premise of all geochemical methods that gases leak out from concealed oil and gas accumulations to the surface of the ground," Mr. Pirson said. He stated that the instrument he used, the nature of which was not revealed, measures the rates at which various natural gases and petroleum hydrocarbons leak through the earth's surface.

"The sensitivity of the machine," he said, "is such that it can detect a leakage of as little as one cubic foot of such hydrocarbon gas a square mile a year."

Mrs. C. E. Gallagher is Accident Victim

MRS. CHARLES E. GALLAGHER, wife of the chairman of the board of The East Ohio Gas Company, Cleveland, was fatally injured on March 5 in an automobile collision. Surviving Mrs. Gallagher are her husband and two daughters, Declie and Eugenia.

Now! You're Cooking with GAS

BE NASHVILLE MODERN! COOK WITH GAS TODAY! IN THE HISTORY OF ONE GENERATION!

Nashville, long famous for quality coffee houses of these fine brands:

Pho-Fucking, Royal Road, Colonial, Florida, Sheraton, American Inn.

When you purchase either of these fine brands coffee you are receiving "THEY ARE COOKING WITH GAS!"

Or when you buy good Helms, Tupperware, or Tupper-Cover Brand's Vitamins, Creams, or Goodness's ovals; Blue Bonnet, Margarine, and Wafers; Bells Health products, Supreme candies and confections, and others, then, too, use "COOKING WITH GAS!"

Or if you eat at one of our hotels, restaurants, or canteens, cafeteria, coffee shops, or lunch counters, the chances are nearly 100 per cent that you are looking at the mark and use "NOW YOU ARE COOKING WITH GAS!"

NASHVILLE GAS and HEATING CO.
On Sixth Ave.

One of a series of ads by the Nashville company capitalizing on a popular snappy saying

Missouri Association of Public Utilities

HARRY D. HANCOCK, of New York City, chairman of the Natural Gas Section, American Gas Association, will be one of the principal speakers at the annual convention of the Missouri Association of Public Utilities, April 23, 24 and 25, in Excelsior Springs, Mo. He will

be introduced by Major T. J. Strickler, president of the national association.

Other speakers will be: Dr. James S. Thomas, president, Chrysler Institute of Engineering; J. Raymond Schutz, Indianapolis, Ind., president, Standard Life Insurance Company; J. H. Warden, Tulsa, Okla., general sales manager, Oklahoma Natural Gas Company; L. A. Hawkins, Schenectady, N. Y., Executive Engineer,

Research Laboratory, General Electric Company; P. N. Bushnell, St. Louis, Mo., safety director, Missouri Portland Cement Company; M. W. Myers, Kansas City, Mo., supervising engineer, Travelers Insurance Company.

President Ben C. Adams, Kansas City, Mo., will preside at the business sessions, and will be host to all available past presidents of the Association at a Get-Acquainted Luncheon, April 24. The past presidents and the present officers will be seated at the head table as guests of honor.

A Safety Meeting under the auspices of the Accident Prevention Committee will open the convention. A. A. Rall, chairman, will preside. A playlet, "An Accident," will be presented by employees of the St. Joseph (Mo.) Railway, Light, Heat & Power Company, followed by "An Investigation of the Accident" by employees of the Missouri Power and Light Company.

E. H. Lewis, a past president of the Association, will act as chairman of the Open Forum for the discussion of timely problems and questions from the floor on the afternoon of April 24. The questions to be discussed are: "General Operating Problems" and "Business Development and Customer Interest."

Fourteen young women and young men from seven electric and gas companies will take part in the annual Speaking Contest on the evening of April 23. Their subjects will be: For women, "Does the Utility Customer Get His Money's Worth?"; for men, "The Utilities' Part in National Defense."

An entertainment program for the ladies attending is being arranged by a committee in charge of Paul C. Ford, Kansas City, as chairman. Mrs. Chester C. Smith, Kansas City, is chairman of the Ladies' Entertainment Committee. The entertainment will include a golf putting contest for ladies, dances, card games, golf contest for men, midnight sandwich spread, annual dinner, floor show, etc.

Maryland Utilities Association

THE Spring Meeting of The Maryland Utilities Association will be held at the Lord Baltimore Hotel, Baltimore, on Friday, April 18. In the morning there will be separate meetings of the gas, electric, and transportation groups addressed by speakers from within the industries on important and timely subjects. In the afternoon there will be a combined session featuring discussions by speakers of national reputation on topics of current interest.

Advertising Pioneer Dies

ANNOUNCEMENT is made of the death of Thomas Rath, former advertising manager of American Stove Company, on February 13, at Lorain, Ohio. A pioneer in national advertising of gas ranges, Mr. Rath retired on January 1, 1938, after 57 continuous years in the gas range industry.

CONVENTION CALENDAR

- APRIL**
- Apr. 1-3 American Society of Mechanical Engineers, Spring Meeting
Atlanta, Ga.
- 3 Indiana Gas Association Heating Sales Conference
Purdue Univ., Lafayette, Ind.
- 7-8 Joint Accounting Conference
A. G. A.-E. E. I.
Cincinnati, Ohio.
- 14-16 Mid-West Gas Association
Hotel Nicollet, Minneapolis, Minn.
- 15-17 Southwestern Gas Measurement Short Course, College of Engineering
University of Oklahoma, Norman, Okla.
- 18 Maryland Utilities Association
Lord Baltimore Hotel, Baltimore, Md.
- 21-22 Gas Meters Association of Florida and South Georgia
Hollywood, Fla.
- 21-23 A. G. A. Distribution Conference
Pittsburgh, Pa.
- 23-25 Missouri Association of Public Utilities
Elms Hotel, Excelsior Springs, Mo.
- 24-25 A. G. A. Hotel, Restaurant and Commercial Sales Conference
Palmer House, Chicago, Ill.
- 28 American Trade Association Executives
Mayflower Hotel, Washington, D. C.

- MAY**
- 29-May 1 U. S. Chamber of Commerce
Washington, D. C.
- May 5-6 American Management Association Insurance Conference
Hotel Astor, New York, N. Y.
- 5-8 A. G. A. Natural Gas Section Convention
Adolphus and Baker Hotels, Dallas, Texas.
- 8-9 National Metal Trades Association
Palmer House, Chicago, Ill.

- May 12 National Fire Protection Association
Toronto, Ont.
- 12-14 Pennsylvania Gas Association
Skytop, Pa.
- 19-21 A. G. A. Production and Chemical Conference
Hotel Pennsylvania, New York, N. Y.
- 20-21 Canadian Gas Association
Royal Connaught Hotel, Hamilton, Ontario.
- 22-23 Natural Gas and Petroleum Association of Canada
Hamilton, Ontario.
- 26-29 National Association of Purchasing Agents
Chicago, Ill.

JUNE

- June 2-5 Edison Electric Institute
Buffalo, New York.
- 3-5 Association of Gas Appliance & Equipment Manufacturers
Ambassador Hotel, Los Angeles, Calif.
- 9-10 Pacific Coast Gas Association Northwest Conference
Portland, Ore.
- 30-July 1-2 Michigan Gas Association
Grand Hotel, Mackinac Island, Mich.

SEPTEMBER

- Sept. 8-10 Mid-West Gas School and Conference
Ames, Iowa.
- 10-12 Pacific Coast Gas Association Annual Convention
Del Monte, Calif.
- week of 28 American Transit Association
Chalfonte-Haddon Hall, Atlantic City.

OCTOBER

- Oct. 6-10 National Safety Congress and Exposition
Stevens Hotel, Chicago, Ill.
- week of 20 A. G. A. Annual Convention
Atlantic City, N. J.



Accounting SECTION

E. N. KELLER, *Chairman*
LYMAN L. DYER, *Vice-Chairman*
O. W. BREWER, *Secretary*

Are Lenient Collection Policies Profitable?



John A. Williams

WHEN we consider the question of leniency in collection policies, we are, of course, dealing with a relative term. At one end of the scale we have deposits from every customer and payment required within fifteen days or off goes the service, while at the other end we have

no deposits and payments made at the convenience of the customer, with service discontinued only after hopeless delinquency has accrued. Prudent and wise management dictates a course between these two extremes, with due thought given to customer relations, average amounts outstanding, collection costs and bad debt losses. Consideration should also be given to the fact that usually there is less liability of a misunderstanding with the customer if the account is paid promptly.

In an effort to find the happy medium, we have been in the process of changing our collection policies in order to make them more lenient, less costly and to reduce uncollectible bill losses. At first glance, these factors would appear to be incompatible, but experience has shown that the adoption of a more lenient policy not only has improved our public relations, but has saved us money. Our collection policies are firm yet sympathetic to the problems of the customer so far as we can go without discrimination. We are dealing with our customers as individuals, instead of dealing with the *public*, irrespective of whether they are located in urban or rural territory.

Deposits

The first item to be considered in the formulation of a definite collection policy is the attitude to be taken regarding deposit requirements. Frankness forced us to admit that the effect of indiscriminate requirement of deposits carried with it the implication that we questioned the customer's financial ability to meet his obligations. This hardly seemed an auspicious way to begin a sincere business relationship. Accordingly, we have eliminated the deposit requirement for residence accounts except

By JOHN A. WILLIAMS
*Niagara Hudson Power Corp.,
Syracuse, N. Y.*

in certain transient areas and except in cases where definite adverse credit information is available. No change has been made in connection with deposits on commercial accounts, where each case is handled on the basis of the credit rating and probable use of the customer.

An analysis of our deposit records disclosed that many deposits have been held for a long period where the principal sum had been exceeded by the interest payments. Even where customers with such deposits had been chronically delinquent the deposit had been of no help in making monthly collections. As a matter of fact, some customers with outstanding deposits do not seem to meet their monthly bills as conscientiously as they would otherwise.

Our deposit interest costs were about \$90,000 per year and the costs of accounting and handling were substantial. While it seemed reasonable to expect that the uncollectible bill record would be adversely affected, we felt that the savings to be made would more than outweigh this adverse ef-

fect, and that an appreciable net saving would result if the bulk of our residence deposits was refunded. Not the least of our considerations was the fact that under the Uniform System of Accounts, uncollectible bill losses are a part of operating expenses, while interest paid on customers' deposits is a deduction from gross income.

Accordingly the program of refunding as many of the deposits as possible was inaugurated, and where the job had been completed, our deposit coverage on residential accounts now averages about 5%. On this basis deposits numbering in excess of 100,000 will be returned to customers, and hereafter such deposits as are taken will be refunded voluntarily on a yearly basis, as conditions may warrant.

Needless to say, our customers were pleased at our demonstration of confidence in them, and the many commendations we have received would have gone far toward compensating for the added losses we had expected. The surprising part is that so far our uncollectible bills have not increased at all.

General Policies

In the discussion of changes made in collection policies, it will be helpful at this point to call attention to the fact that our company has discount rates and also that we have made a practice for many years of initiating collection action on ordinary delinquent residential accounts at the expiration of the second discount date, at which time two monthly bills are in arrears. No changes have been made in these policies.

First Notices and Stickers

For many years we mailed a first notice at the expiration of the first discount period and then attached a notice to all bills on which there appeared an arrears item, calling the customer's attention to the arrears, and requesting immediate payment. One serious objection to the use of such notices was the fact that they went to all delinquent customers—the customer who allowed his bill to become delinquent only once in two or three years the same as the chronic delinquent.

Judging from a few straws in the wind in the form of occasional letters and quips from customers, we were aware that some people objected strenuously to the notices. What we did not know was how much money the notices were bringing in. Rather than to increase expenses by instituting records which would allow us to send such

Last REMINDER

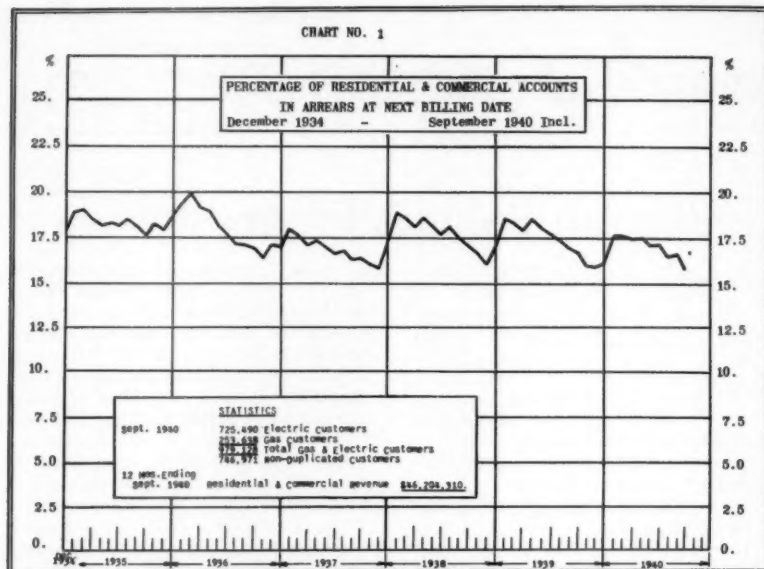
**Fifth National Accounting
Conference of the American
Gas Association and the Edison
Electric Institute**

Individual meetings of specialized groups, roundtable conferences, speakers of national reputation on all problems of current interest and importance to utility accountants. A give-and-take exchange of ideas on the latest practical information. Don't miss it.

**NETHERLAND PLAZA HOTEL
Cincinnati, Ohio**

April 7 and 8, 1941

Presented before National Accounting Conference, Detroit, Mich., Dec. 2-4, 1940.



notices only to chronic delinquents, we first dropped the first notice and then the sticker. To our surprise, we found that collections held up just as well without the notices and that evidently they served no useful purpose. By this change in routine, we not only saved the printing preparation and handling costs of the notices and the delivery or mailing costs of the first notice, but also removed a source of annoyance to many of our customers.

On chart No. 1 we show the percentage of our accounts in arrears at next billing date for the last five years and nine months. While there may be a few two months' bills represented in this group the line represents principally one month's bills delinquent at next billing date. This line shows a fairly even trend and we have not been able to discover where the discontinuance of the first notice or of the sticker had any effect whatsoever upon our collection figures. An interesting sidelight of the curve is the seasonal trend of payments or the upswing in the delinquents every year during January and February, when Christmas bills evidently have the call.

Collection Action

Notices or no notices, there comes a time when collection action must be taken. Under our policy, as stated previously, this time comes at the end of the second discount period. This is the point where individual treatment of customers becomes highly desirable. Collection statements, covering accounts unpaid at the end of the discount period and carrying delinquencies are furnished to the collection supervisor with a notation as to how many times the account has required collection action in the preceding six months. From this record of the customers current paying habits the collec-

tion supervisor classifies the customer as "A," "B" or "C" as follows according to the number of times the account has required collection action in the preceding six months:

- "A"—None
- "B"—One
- "C"—Two to Six

Under the New York State law a customer's service cannot be discontinued for non-payment of an account unless five days' formal notice has been given to the customer. Up until the last year or so it had been our practice to make first calls on all accounts two months or more delinquent. Then, on the basis of the collector's report, the formal disconnect notices were forwarded to practically all customers whose accounts were still delinquent.

This necessitated a second collection call five days later on all of those customers who failed to pay in response to the notice. This meant that our collectors had to cover the entire territory twice. In order to eliminate this second collection trip, we have inaugurated the policy of mailing a letter couched in pleasant terms to the "A" customers and at the same time mailing formal final notices to the "B" and "C" customers. At the expiration of the statutory five-day period our collectors call on the customers whose accounts have not been paid by that time. Payment is requested from the "A" customer, but if it is not received no further action is taken until the following month, when the customer will have automatically moved himself into the "B" class.

Our collectors are given full authority to handle the "B" and "C" customers as the facts in each case seem to dictate. We expect them to make collection of the accounts assigned to them, but if a customer asks for a reasonable extension it is given due

consideration. Knowledge of the payment habits of the customer, as entered on the statement, is a big help to the collector in determining the course to be followed. If no other alternative seems open the collector discontinues the service. However, we take no satisfaction in disconnecting a customer's service, for thereby we admit that we cannot collect the account and in a considerable number of the cases we lose a customer for the company.

The percentage of payments received in response to the letter to "A" customers is very high. These customers are largely the one-time delinquents, many times they were out of the city, and they seem to appreciate receiving the friendly letter rather than a printed notice.

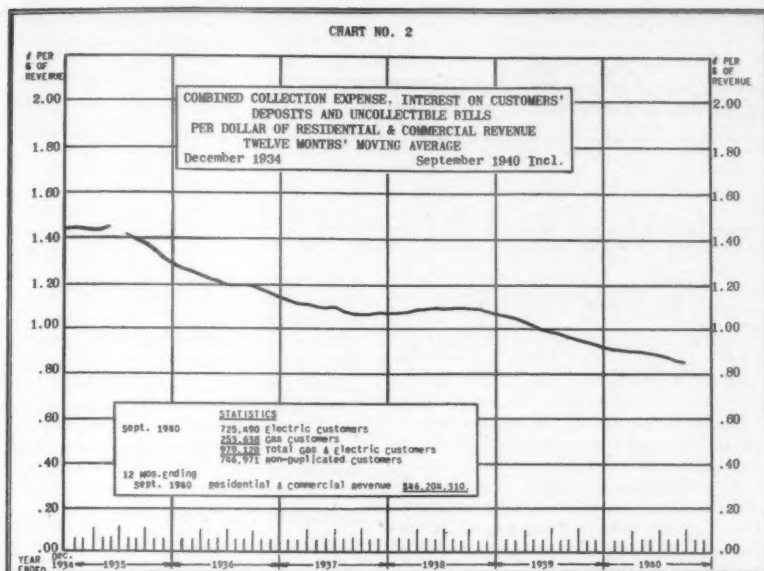
We have extended the privilege of granting payment extension to the customers' service clerks as well as to the collectors. A record is kept of the number of extensions granted by each collector and each customers service clerk as well as the number of agreements kept by the customers. In this way we are able to judge as to the effectiveness of each employees' approach to the customers who ask for extensions. It has been extremely gratifying to find that the customers keep these definite promises to make a payment at a given time in more than 80% of the cases.

We seldom have any complaints about the Collection Department these days, so we feel that the liberalization of our collection policies has been instrumental in making friends for the company. We have strengthened the morale of our collection and customer service clerks through giving them more authority. We have saved the necessity of making many thousands of collection calls each month, and we have reduced our "cut-offs for non-payment" by about 60%.

Overall Costs

In addition to the intangible advantages of improved customer relations and increased employee morale these changes have resulted in substantial economies. On chart No. 2 we show the ratio of combined collection expense, interest on customer deposits and uncollectible bills to residential and commercial revenue for the past six years and nine months. Under collection expense we include all amounts charged to Account 780.4 "Collections" except the salaries of tellers and other daily cash receipt expenses, which leaves in the account all inside and outside expenses incurred in the collection of delinquent accounts. Details for the beginning and ending periods shown on the chart are also shown on the next page.

Economic conditions have unquestionably had a good effect upon the uncollectible bill write-off. Also, there has been a decrease of 33⅓% in the interest rate on customer deposits for the period after July 1,



	Twelve Months Ending Dec. 31, 1934	Sept. 30, 1940
Residential and Commercial Revenue.....	\$39,877,161	\$46,204,310
Collection Expense	354,488	271,326
Uncollectible Bills	127,366	49,167
Interest on Customers' Deposits.....	89,969	68,382
Expense Total	571,823	388,875
Expense Per Cent	1.434	.842
Expense Decrease	—	182,948

1940. Disregarding these two factors there still remains a large enough part of the \$182,948 saving to make the changes very much worth while from a financial standpoint. However, had there been no reduction in expenses or even had there been a slight increase in expenses, the liberalization would have been desirable.

Conclusion

The changes discussed have been made gradually and in some cases have not yet been made in all divisions.

We watch monthly figures on results carefully and a sharp reversal of trends would, of course, require a reappraisal of the principles involved. However, the encouragement we have received so far acts as a stimulus to further effort and we hope to continue liberalizing our collection policies and bettering the results obtained.

Record Gas Send-Out

SEND-OUT of gas by Public Service Electric and Gas Company of New Jersey, Tuesday, March 18, totaled 119,804,000 cubic feet, the largest of any day in the history of Public Service. This is largely attributable to its increased use for industrial purposes and for building heating.

Formula for Letter Writing

MANY an able credit and collection man has poured his literary soul into writing a series of collection letters ranging all the way from gentle reminder through cajolery to undisguised threat. But it is doubtful if any ever produced a more fetching epistle than the ambitious office boy who in his boss's absence typed this ultimatum to a delinquent debtor:

"Unless we receive your check for \$50 by June 6 we will take steps that will astonish you."

The letter brought a check where every other stratagem had failed, or so the story goes.

Writing a good letter of any sort requires a peculiar touch. The secret, if there is a secret, says Charles A. Emley in *Nation's Business*, is to "Put yourself in the envelope and seal the flap."

The correspondent who can do that must have first swept his mind clear of all the cliché cobwebs that make most letters so banal, particularly business letters. If he is replying, he replies directly, knowing it's not necessary to repeat half of what the other person's letter has said. A letter does not have to be a complete record in itself. Then he speaks his mind with as little reserve as the matter and character of his correspondent will permit. He throws in, if possible, at least one conversational human touch.

Finally, having written his epistle, the

good letter writer reads it over and asks himself if everything expressed in it is perfectly clear. If there's the slightest doubt on that score he revises before sealing himself inside the flap.

Named Purchasing Agent



H. H. Stuart

H. H. STUART, veteran chief clerk in Portland (Ore.) Gas & Coke Company's operating department, has been named purchasing agent by E. L. Hall, vice-president and chief engineer. The appointment fills a vacancy created by the death last December of Urban O. Rogers,

purchasing agent for 21 years.

Stuart is a 28-year veteran of the gas company organization, having joined as a transitman and timekeeper in 1913. In 1918 he was made chief clerk in the operating department. M. R. Kowaleski, a 17-year veteran in the department, will replace Stuart as chief clerk.

Portland Gas & Coke Company's purchasing department makes expenditures of approximately \$1,500,000 annually for supplies, equipment and materials required in serving 90,000 customers.

Controller of Niagara Hudson Is Dead

FRANCIS J. BRETT, vice-president and controller of Niagara Hudson Power Corporation, died of a heart attack Mar. 23 at his home in New Rochelle, N. Y. He was 49 years old.

Born in Rochester, New York, Mr. Brett was the son of Mrs. Ella Sullivan Brett and the late John T. Brett. He attended St. Mary's Parochial School in Niagara Falls and the Niagara Falls High School. He had been associated with the Niagara Hudson System and its predecessor companies for the past thirty-three years, starting as an office boy at the age of 16 with the Niagara Falls Power Company.

Shortly after the formation of Niagara Hudson Power Corporation in 1929, Mr. Brett became its assistant treasurer, advancing to controller in 1930 and to vice-president and controller in 1936. In February, 1940 he was elected to the Board of Directors.

He was a director of Central Hudson Gas and Electric Corporation, treasurer and director of the Utilities Mutual Insurance Company, vice-president of Buffalo, Niagara and Eastern Power Corporation and a member of the executive committee of the Controllers Institute of America and of the advisory board of St. Mary's Hospital, Niagara Falls. He had been a member of the American Gas Association since 1931.



Residential SECTION

R. J. RUTHERFORD, Chairman
E. J. BOYER, Vice-Chairman
J. W. WEST, Jr., Secretary

Why Can't We Sell More Gas?

THIS subject seems to imply—"if we can sell electricity, why can't we sell gas?" I shall therefore treat it from that viewpoint.

Before attempting to answer the question—Why can't we sell more gas? let us first briefly review the situation in which the manufactured gas industry now finds itself. These figures deal only with the manufactured gas industry, which includes mixed gas.

In 1929, there were 9.30 million domestic gas customers (including house heating) as compared to 9.77 million in 1940, or an increase of 5.05% in 11 years. Customers have not kept pace with population increases.

In 1929, gas sales amounted to 269 billion cubic feet as compared to 267 billion cubic feet in 1940, or a decrease of 2 billion cubic feet, or a decrease of .74% in sales.

Gross revenue in 1929 was \$325 million as compared to \$304 million in 1940, or a decrease of \$21 million, or 6.4%.

In 1929, gross corporate income (available for interest, dividends, and surplus) was \$124 million as compared to \$67 million in 1939,* or a decrease of 50%.

The manufactured gas industry as a whole has not fared well in the past 11 years.

Market Possibilities

As to the market possibilities, consider the two principal fields of house heating and automatic water heating. It is conservatively estimated that there is a market for 1,000,000 house heating customers in manufactured gas territory. This represents a potential gross revenue of \$150 million.

The present saturation of automatic storage water heaters is 15%. It is estimated that there is a market for 2,500,000 automatic water heaters in manufactured gas territory after making allowance for economic factors, opportunity and present saturation. This accounts for an additional \$75 million in gross revenue. These two combined represent a potential increase in gross revenue of \$225 million or 60% of present gross revenue. If 40% of this is reflected in net revenue, there is a potential increase in net revenue of \$90 million, or 136%.

* 1940 figures not yet available.

Presented at Mid-West Gas Sales Conference, Edgewater Beach Hotel, Chicago, February 18, 1941.

By EDWIN VENNARD

Vice-President, Middle West Service Company, Chicago, Ill.

So much then for the present position of the industry and the market available if we can but sell our product.

In endeavoring to analyze why we can't sell gas, let us review the factors necessary for all utility sales and see wherein those factors exist in the electric utility and may be absent in the gas utility.

1. Dependability of Service

This is a fundamental factor essential to both. It is present in the gas utility possibly to a greater extent than in the electric. We have the service to sell and the question of dependability of gas service is seldom raised to bother the salesman.

2. Efficient, Attractive Appliances to Use the Commodity

Up until a few years ago, it could be said that manufactured gas equipment for the home lagged considerably behind electric equipment in beauty, efficiency, convenience and comfort, or in other words in being modern, but that cannot be said today. We have the equipment with all the eye appeal, convenience, efficiency and price that is needed to make the sale. We can offer the same heat control, insulation and all the conveniences of the electrical equipment. Water can be heated efficiently and economically in a unit that adds beauty to the kitchen. The gas manufacturers have now come forward with completely modern equipment and have made it available to the gas industry.

3. Competitive, Promotional Rates

The gas industry has also lagged behind the electric industry in the design of competitive, promotional rates with low follow-on steps. Rate engineers of combined electric and gas properties must assume their part of the blame for this. It is probably due to the great emphasis that has been placed on the electric industry in jointly operated properties. But, the gas industry in recent years has modernized its rates. By and large they are now promotional; they go low enough to make automatic water heating attractive in price.

House heating service is available either at special rates or on lower follow-on steps in standard rates. The gas industry with a few minor exceptions is in step with the electric industry in promotional rates.

As far as the customer is concerned, the gas industry probably here also has the edge on the electric industry in the cost of the service.

4. National Advertising

The gas industry has lagged behind the electric in national advertising. It is still lagging to some extent but has recently made a great improvement and now that modern equipment is available, the industry might well consider more national advertising with the co-operation of utilities and manufacturers.

5. Profitable Business to the Utility

In the principal fields open to the manufactured gas industry, I would say that the gas has an advantage over the electric business. In the field of house heating, the gas industry, of course, has practically no competition from the electric. In the field of cooking and water heating, the gas industry in most cases has a greater margin of profit than the electric business has. Consider, for example, the joint operation of electric and gas properties. As a rule, the company has excess gas capacity but little excess electric capacity. When a gas range is sold, the company makes relatively little additional investment in plant and distribution. When an electric range is sold, the company invests from \$50 to \$75 additional in the distribution system and must invest in new plant capacity sufficient to carry .8 to 1 kilowatt.

Most analyses show that under such joint operation, the company loses in over-all per cent return when it replaces a gas range with an electric range and when it replaces a gas heater with an electric water heater.

6. The Will to Sell

Up to this point we have discussed various tangible factors necessary and common to both electric and gas sales. I believe we may safely conclude that on these particular factors the electric industry has no advantage over the gas industry. The gas industry is equipped with the merchandise, with the service, promotional rates, competitive position and all the tangible factors required to make the sales.

There is only one real factor remaining

and that I choose to call the will to sell. If we have equal, tangible advantages with the electric industry and still can't sell gas, the fault then is in ourselves. It is psychological. It is a state of mind. That is the meat of our problem. In endeavoring to find the solution, let us not criticize the product or the manufacturer or the salesman or the customer; let us rather first analyze ourselves to see wherein we may be at fault. We must somehow develop the will to sell gas.

This leads inevitably to the fundamental psychology of selling. Books have been written on the subject. I will not attempt to give you any lengthy discourse on sales. But I will give you what I consider the first principle of selling. You have often heard it said that salesmen are born and not made. I don't believe it. Far more are made than are born. They are made, however, by developing within themselves the qualities that make a successful salesman—aggressiveness, initiative, industry, imagination, stick-to-it-ive-ness, will power.

Since our trouble appears to be a state of mind, I made a little study of psychology.

Sales Psychology

The thing that produces sales, this human machine, is a wonderful piece of mechanism. Unlike other machines, its capacity appears to be very flexible, indeed in some respects, it seems to have no top limit. It is peculiarly different in other respects. The harder this machine works, the more it produces and the stronger it becomes and therefore the more capacity it develops for still greater production.

In trying to determine why we can't sell gas, let us break this machine down into its component parts, analyze it, see how it works, and see in what respects it is able to sell electricity but can't sell gas.

This human machine has three types of power:

- (a) Physical power.
- (b) Mental power.
- (c) Will power.

Physical power is developed through exercise. The more physical work a man does within practical limits, the stronger his muscles become, thereby increasing his capacity for still more work. We go to a gymnasium to make ourselves strong physically, thereby increasing the physical power.

In like manner mental power is developed through exercise. Schools and colleges are gymnasiums for the mind. They agitate the gray matter. The value of a college education is not in the knowledge acquired, but is measured by the number of mental difficulties that are overcome. The more the mind is exercised, the more it is made to concentrate, to think and to overcome difficulties, the more agile it becomes and the better able to overcome other and greater difficulties.

And so, with the will power. All psychologists now tell us how the will power is made strong through exercise. Possibly colleges in the future will devote courses to these exercises. The fundamental qualities

necessary in selling are products of the will power and are therefore developed by exercise.

The manufactured gas industry has overcome somewhat its defeatist attitude. For a time it believed that the position in which the industry found itself was beyond the control of the operators. They now seem to have gained greater faith both in themselves and in their product.

For many years we developed a state of mind that believed we could sell electricity, but couldn't sell gas. That feeling on our part permeated down through our organizations. We must train ourselves to reverse those mental processes with the realization that we now have the product and the equipment and the only thing lacking is the enthusiasm and the faith and the courage and the will power. If we would but declare our belief in the gas business and announce to our organizations that it is going to be lifted to its rightful place in our business, that feeling of confidence will find its way down through the lines.

I will give you one example of what I mean in the state of mind of the executive. Walter J. Hodgkins, president of Lake Superior District Power Company, believes that gas can be sold and his *faith* and enthusiasm are reflected throughout his organization. For example, the saturation in gas water heaters increased from 3.9% in 1932 to 42.9% in 1940. Apply that same percentage increase in an 8-year period to the industry as a whole and see what a splendid effect it will have on net revenue.

Example of Edison

Possibly the electric industry has heard so much about the tremendous will power of its founder, Thomas A. Edison, that some of his spirit continues to be reflected. If that is so, then possibly the mere mention of one incident in his life may illustrate the point I am now trying to make.

When he was called a genius, his reply was that genius is 10% inspiration and 90% perspiration.

Let us review briefly the story of his building the first incandescent lamp. He conceived the idea that light could be obtained by passing a current of electricity through a fused wire. He didn't know it could be done—no divine providence told him that it was possible—but he had sufficient faith and confidence and will power to devote two years to trying, spending his entire personal fortune. He hired a number of trained assistants and sent them to all parts of the world to gather material for him to try in his efforts to find a substance which when fused would have sufficient durability and which would "light up" with the passing of current.

The procedure required that he connect the substance between two wires, bake in a furnace, remove and enclose within a glass bulb without breaking the tender fibre. He tried hundreds of substances. He tried straw—he tried hair—he tried paper—he tried everything he could think of. He went through this tedious process, not once, not twice, not a hundred times, but 1,600

times over a period of two years, and 1,600 times he met with complete failure.

And, then what happened? He thought of a cotton thread—he carbonized it—he tried it—and it gave one tiny glow before breaking. It was enough for him—he tried it again and again—with that cotton thread—for two days and two nights without sleep. He had the *patience*. He had the *determination*. He had *faith*. And what was the result? It glowed! It remained lighted! He *succeeded*!! After 1,600 failures, he **SUCCEEDED!** And he gave light to the world and started a great industry.

How many of us would have withstood 25 failures—how many would have gone to 100—how many would have gone through 1000 failures—how many would have gone through 1,600 failures?

That is what I mean in the training of will power—the ability to try and try again after so many failures. He had trained himself to work incessantly on the task at hand.

Importance of Enthusiasm

The gas industry has not succeeded too well in the past 11 years. It has failed to show any increases. How will the industry come back in spite of those failures? Will it try and try again until it does succeed? Does it have *faith*?

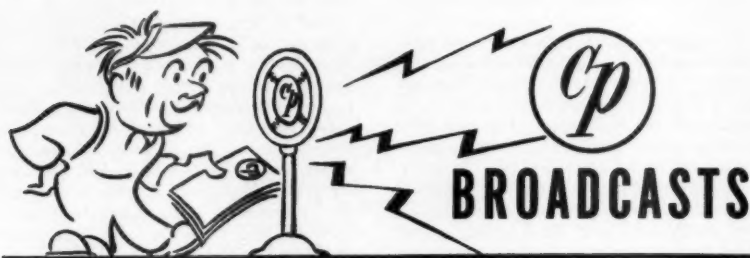
"Enthusiasm is the greatest asset in the world—it beats all money, power and influence. Enthusiasm tramples over prejudice and opposition, spurs inaction, storms its object and like an avalanche overwhelms and engulfs all obstacles.

"Let us set the germ of enthusiasm afloat in our business, in our meetings, in our work, carry it in our attitude and manner—it spreads like contagion and will consume every fibre of the business before you realize it. It will mean increase in production and decrease in cost—it will mean joy and pleasure and satisfaction to the employees. It will mean spontaneous bedrock results and the vital things that pay dividends."

If we haven't sold gas, let us realize that the fault is in ourselves and not in the product or the equipment. It may have been there in the past, but it is not now. If we don't sell gas from now on we, as individuals, are to blame for our state of mind and for not giving the sales force the backing it needs in the sale of gas appliances. Let us start now and realize that gas *can* be sold. We will see that attitude go down through the organization to the man who calls on the customer in a face to face contact, which is the only moment that counts as far as building business is concerned, and we will find that we will sell gas.

The Man Who Thinks He Can

"If you think you are beaten, you are;
If you think you dare not, you don't.
If you'd like to win, but think you can't,
It's almost a cinch you won't.
If you think you'll lose, you're lost,
For out in the world we find
Success begins with a fellow's will;
It's all in the state of mind."



Roanoke Company Wins 1940 National Best Performance Award



CP Winner's Trophy

IN a close race among all the gas companies in the United States and Canada, The Roanoke Gas Company, Roanoke, Va., led by E. V. Bowyer, new business manager, captured the coveted CP Ranger Club National Best Performance Award for the outstanding performance in promoting the sale of CP gas ranges in 1940. Dealer sales played an important part in helping this manufactured gas company make an outstanding record.

For selling greatest number of CP ranges per 1,000 domestic meters in 7 Divisions and 8 Regions, 15 gas companies were presented with handsome silver and walnut Victory Trophies by Commanding Director George L. Scofield.

Victory trophies will be awarded gas companies which lead each of the 7 Divisions in CP sales per 1,000 domestic gas meters in 1941.

Winning companies in 1940 were:

Divisional Winners

- DIVISION I**—Southern California Gas Company, Los Angeles, Calif.
DIVISION II—United Gas Corporation, Houston, Texas.

DIVISION III—Michigan Consolidated Gas Company, Grand Rapids, Mich.

DIVISION IV—Central Indiana Gas Company, Muncie, Ind.

DIVISION V—Roanoke Gas Company, Roanoke, Va.

DIVISION VI—Florida Public Utilities Company, West Palm Beach, Fla.

DIVISION VII—Atlanta Gas Light Company, Newnan, Ga.

Regional Winners

REGION I—The Bridgeport Gas Light Company, Bridgeport, Conn.

REGION II—Republic Light, Heat & Power Company, Buffalo, N. Y.

REGION III—Georgia Public Utilities Co., Augusta, Ga.

REGION IV—Western United Gas and Electric Co., Aurora, Ill.

REGION V—Minneapolis Gas Light Company, Minneapolis, Minn.

REGION VI—Public Service Company of Colorado, Fort Collins Division.

REGION VII—Mississippi Public Service Company, Amory, Miss.

REGION VIII—Washington Gas & Light Company, Tacoma, Wash.

A. G. A. Convention Trips for CP Winners

THE enthusiastic reception given to last year's CP Ranger Club winners of all-expense trips to the A. G. A. National Convention has brought a deluge of requests for the repetition of this prize for the outstanding sales leaders in the 1941 CP Ranger Club. In view of this interest, Club Directors have announced 7 all-expense trips for gas company salesmen to this year's convention next October at Atlantic City, N. J.

Competition to determine which salesmen are presented to the convention as America's 7 leading CP Ranger sales producers will be on a divisional basis. Rangers with the largest number of CP sales in their respective Divisions from January 1 to August 31, 1941, will attend the convention session in October with all expenses paid by the American Gas Association.

Parker To Direct CP Field Program



Alton B. Parker

ALTON B. PARKER has been appointed national sales counsellor for the Association of Gas Appliance and Equipment Manufacturers, according to an announcement by Alan P. Tappan, chairman of domestic gas range division and vice-president of Tappan Stove Co., Mansfield, Ohio.

Mr. Parker's duties will consist in directing the CP gas range program in the field, speaking to dealer and utility salesmen and consumer groups, and aiding the department stores in the merchandising of CP gas ranges. The program is sponsored by more than 20 leading gas range manufacturers, tying in cooperatively in sales promotion and advertising for CP gas ranges.

Formerly in charge of dealer sales development and dealer relations for the United Gas Corporation in Texas, Mr. Parker goes to the association with an extensive background in both dealer and utility merchandising.

CP Manufacturers Present Gift to R. S. Agee



A well-earned tribute to R. S. Agee in the form of the presentation of a solid bronze desk set is presented by C. W. Berghorn, A. G. A. E. M. managing director, on behalf of the CP gas range manufacturers "as a symbol of high regard" for his outstanding work. Mr. Agee recently resigned as director of the CP program to become vice-president of Roberts & Mander Stove Co., Harboro, Pa.

CP State Managers Plan Program



State managers of the CP Range Program at a meeting in Kansas City, Mo. Left to right, seated: Major T. J. Strickler, president, American Gas Association, Herbert A. Watson, C. H. Manney, Ray T. Ralliff, Cy C. Young, George D. Wells, Charles Gillespie, A. Kanekeberg, and F. M. Rosenkrans. Standing: A. B. Parker, Clair Henderson, H. C. Porter, Fred Karr, Jess G. Tooker, Jack Torbert, Ward Husted, Alden Coffey, Jr., Frank E. Smith, Jr., Leon H. Albus, and Charles D. Greason.

STATE managers of the CP Range Program for Region 6 met in Kansas City recently. The meeting was in charge of Cy C. Young, assistant new business manager of the Gas Service Company, who is regional manager of the CP program for that district. The district comprises the states of Missouri, Kansas, Oklahoma, Colorado, Wyoming and New Mexico.

State managers attending the meeting were: Alden Coffey, Jr., merchandise sales

manager, Oklahoma Natural Gas Company, Tulsa; Charles Gillespie, commercial manager, Missouri Power and Light Company, Jefferson City; Ward Husted, manager, Rocky Mountain Gas Company, Laramie, Wyo.; A. "Pete" Kanekeberg, district new business manager, Public Service Company of Colorado, Denver, and George D. Wells, new business manager, Gas Service Company, Topeka, Kan.

Gas Refrigeration Drive Enters Third Quarter

FAR-REACHING sales opportunities for the gas industry are outlined in the third quarter portfolio issued by the American Gas Association Refrigeration Committee entitled "The American Way," which covers the April, May and June period of the current twelve-month gas refrigeration campaign sponsored by the committee. B. T. Franck, vice-president of the Milwaukee (Wis.) Gas Light Co., is chairman.

Factual material from an impartial survey conducted by the Curtis Publishing Co. shows that the replacement market offers virtually unlimited sales territories for those gas companies that eye this market for gas refrigeration. The Curtis company's survey has shown that the majority of families which replaced their automatic refrigerators did so because they were worn out and needed frequent repairs, were dissatisfied with performance and noisy.

"The April, May and June quarter offers an 'all out' sales opportunity for the gas industry to capture their full share of the refrigeration market for gas refrigeration," Mr. Franck said. "For the past six months we have been preparing the way for our big Spring sales drive. The time has come when we must act."

Record-breaking registrations for companies, salesmen and meters, were reported by John W. West, Jr., secretary of the Committee, and secretary of the Residential Section of the American Gas Association. Mr. West said that for the past five months ending March 1, company registrations reached 554, a gain of 136 companies over that of previous years. Registered meters reached 13,058,108 compared to the previous record of 11,792,011. More than 4,000 salesmen have been registered exceeding the high mark of last year by more than 500.

Winners to Get Florida Trips

A thrill-packed trip to the famed resort of Miami, Fla., with an optional trip to either picturesque Nassau, capital of the Bahamas, or to Havana, Cuba, with its Latin American charm, await the winners of the "Servel Annual Best Performance" all-expense honor trips awarded by the American Gas Association Refrigeration Committee in its 1941 twelve-month gas refrigeration sales campaign.

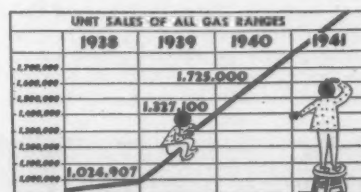
B. T. Franck, chairman of the committee and vice-president of the Milwaukee (Wisc.) Gas Light Co., announced that

CP Ranger Club Has 40% More Members

More than 115 registrations in the 1941 CP Ranger Club have been received from gas companies in all parts of the United States and Canada, an increase of 40 per cent over the 1940 figures.

These registrations represent more than 7500 gas company and dealer salesmen who will compete for the \$10,000 cash prizes and other valuable awards.

In addition to cash awards there are trip awards for gas company salesmen, recognition for home service departments and manufacturers' representatives and special awards for gas utility companies.

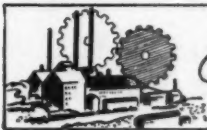


the number of salesmen who are to make the trip would be doubled over last year, thus making 12 salesmen in addition to the 35 company representatives who will enjoy this trip next October 23, when the American Gas Association convention closes in Atlantic City.

Miss America Leads Hit Parade

ADOPTING "Miss America" as the standard bearer of its 1941 Hit Parade, American Stove Company starts off the parade with another of its promotion packages in an elaborate red, white and blue presentation portfolio, containing a completely integrated sales and advertising program on Magic Chef gas ranges.

"This campaign," announces Lloyd C. Ginn, sales promotion manager, "is built around Miss America, who in real life is Frances Marie Burke of Philadelphia, 1940 winner of the Atlantic City Beauty Pageant and holder of this year's crown of 'Miss America.'" The portfolio is divided into three sections (1) announcing a complete new 1941 line of ranges, (2) presenting the national advertising program for the first half of the year, and (3) outlining a lively array of advertising, display and promotion helps for dealers and gas utilities.



Industrial & Commercial Gas SECTION

H. CARL WOLF, Chairman

GEORGE F. B. OWENS, Vice-Chairman

E. D. MILENER, Secretary

Sales-Technical Sessions at Baltimore Define Future of Industrial Gas

FOR its biggest 1941 meeting, industrial gas returned to the city where the first gas company in the United States was established in 1816 and where one of the first industrial gas sales departments in the country was formed—Baltimore. Some 191 registered delegates and approximately 50 visitors participated in the 1941 A. G. A. Conference on Industrial Gas Sales, conducted by the Industrial and Commercial Gas Section of the Association, and held at the Lord Baltimore Hotel, Thursday and Friday, March 13 and 14.

The papers, the attendance, the executive interest and the cooperation received from those outside of the Association and

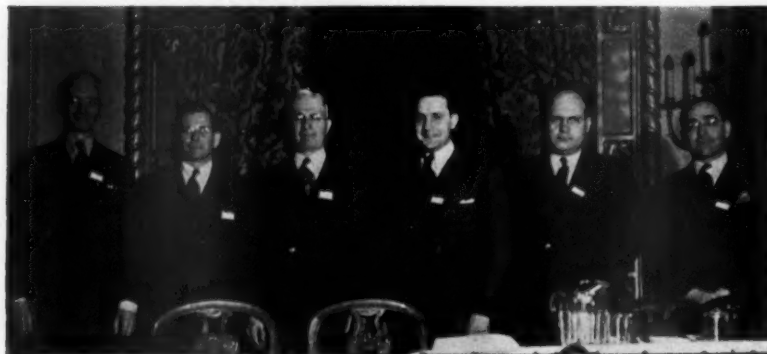
Power Co. of Baltimore, Carl P. Mann, manager, drying division, The Selas Company, Philadelphia, delivered the first sales-technical paper of the Conference on the subject, "Gas Fuel for Short-Cycle Curing of Industrial Finishes."

Radiant Energy Finish-Baking Evaluated

Reporting upon the findings of a research investigation sponsored by the A. G. A. Committee on Industrial Gas Research, Mr. Mann concluded that the most economical, flexible and effective method of baking short-cycle industrial finishes is with a combination of radiant and convected heat estab-



Conference leaders—Vice-Chairman George F. B. Owens (left) and Chairman H. Carl Wolf (right) with Charles M. Cohn of Baltimore, featured speaker at the Thursday luncheon



The symposium on cooperative sales methods (left to right): Carroll B. Mershon, Pittsburgh; Edward W. Mears, Philadelphia; B. H. Gardner, Columbus (leader of the symposium); O. N. Sellers, Chicago; Charles F. Hennessy, Chicago; and E. L. Stauffer, Charleston

its membership, all testified to the pyramiding significance of A. G. A. Industrial Gas Sales Conferences since their modest beginning in 1936. The editor of a leading national trade magazine addressed to one of our largest customer groups referred to the meeting as "one of the most regularly productive conference meetings on the American industrial scene today."

From Texas, New England, Georgia, Wisconsin, and a dozen other states came executives, sales managers, industrial gas men and manufacturers, to be on deck when H. Carl Wolf, president of the Atlanta Gas Light Company and chairman of the A. G. A. Industrial and Commercial Gas Section, called the meeting to order promptly at 9:30 A.M. for the first Thursday session. Following a welcome to Baltimore by R. H. Tillman, manager, new business department of Consolidated Gas Electric Light and

Power Co. of Baltimore, Carl P. Mann, manager, drying division of the newer types. This contention was supported by a mass of research data evaluating from different viewpoints the relative merits of baking with: (1) recirculated hot air, (2) gas-fired radiant, and (3) electric near-infra-red-ray lamps.

Attacking the mysticism which surrounds infra-red-ray-lamp baking, Mr. Mann described tests demonstrating the many limitations of this much-promoted method with respect to product, finish, cycle and technique. He also showed that, although infra-red-ray-lamp installations are generally considered to be less costly than gas-radiant or convected-air jobs, the price situation is generally quite the reverse when computations are based on equivalent productive capacities.

"There is an industrial market for the gas-fired unit heater, regardless of local costs of competitive fuels, comparative costs of equipment and installation, and the nature and number of plants and factories in your territory," asserted W. N. Blinks, General Gas Light Co., Kalamazoo, Michigan, in introducing his discussion of "The Sale and Use of Gas Unit Heaters in Industrial Plants." To substantiate his claim, Mr. Blinks listed field after field for profitable industrial unit heater installations, and offered many suggestions with regard to methods of better adapting gas unit heating to the specific requirements of different types of establishments.

Relative to cost, Mr. Blinks showed how gas unit heaters can be sold for plant usage (even under the most adverse competitive rate situations) on the basis of savings in operating-labor overhead, floor space and fuel storage, coupled with high efficiency, convenience, flexibility, simplicity, and long equipment life. In many cases, he cautioned, it may be wise to encourage a prospect to try out just one unit heater in one department only and let the prospect sell himself on a complete installation rather than trying to completely service the plant at the start. Mr. Blinks also warned against ill-advised installations, such as improperly applied single units intended for spot heating within large cold spaces. He concluded with the thought that unit heating is one of the most versatile and basic loads in the industrial gas classification.

Furnaces for armament represent over 90 per cent of our present production capacity,



The conference in action—Left to right: (1) Carl P. Mann, The Selas Co., who spoke on finish baking; F. Coleman Starr, Surface Combustion Corp., speaker on national defense work; and W. G. Gude, Steel magazine. (2) J. Paul Jones, Baltimore, pointing to chart of

humidity and temperature control cycles in connection with his paper on a new type of meat smoke house. (3) Relaxing in the Industrial Gas Equipment Club were: C. B. Merson, Pittsburgh; James C. Ayers, Wheeling; R. L. French, Chatham, Ont.; and L. G. Waskom, Dallas

F. Coleman Starr, Surface Combustion Corp., Philadelphia, reported in his timely analysis of the use of gas in the production of munitions. Mr. Starr's paper is presented in full elsewhere in this issue of the MONTHLY.

Management Looks to Sales for Guidance

Featured speaker at the Thursday Luncheon was Charles M. Cohn, executive vice-president, Consolidated Gas Electric Light & Power Company of Baltimore, who interpreted "The Industrial Department's Responsibility to Management." In the opinion of this veteran executive in a highly industrialized city, it is the responsibility and the duty of the industrial gas sales department to: (1) take the initiative in conducting market surveys on a continuous basis, and of reporting regularly to management the data necessary for its subsequent evaluation of potential business, (2) inform management what can and should be accomplished through rate adjustments in the industrial bracket, and to define "terms of service" under which industrial gas should be sold in different fields, (3) develop and carry through promotional methods—advertising, publicity, sales promotion, etc.—even to the extent of recommending tests, researches, and trial installations designed to demonstrate what can be achieved with industrial gas.

In reference to the placement of these

responsibilities at the door of industrial sales departments, Mr. Cohn said: "I know it works! It is the industrial department's job to keep after management, establish closer contact with management, and supply to management the information on the basis of which it must evaluate industrial business." Mr. Cohn feels that management must understand the difference between the residential and the non-residential phases of the gas business, and should be glad to rely upon the industrial sales manager for market, rate, promotional and sales policy advices.

Meat Smoking, Ceramic Firing—Better Methods Reported

Leading off the Thursday afternoon session under the gavel of George F. B. Owens, vice-chairman of the Industrial and Commercial Gas Section, J. Paul Jones, Consolidated Gas Electric Light and Power Co., Baltimore, described a new type application of gas to air-conditioned smokehouses. Culminating several years of development in the plant of a local meat producer, there has been developed a unit gas-fired smokehouse, which has proved "highly satisfactory, and productive of goods far superior to those formerly smoked in under-fired houses."

The new design matches the advantages of the recently introduced steam-heated air-

conditioned smokehouses, and offers (1) additional safety, (2) greater cleanliness, (3) temperature and humidity control with resultant shrinkage reductions, (4) more uniform heat distributions, (5) better color and flavor, (6) low maintenance costs, (7) rapid heat recovery for finishing cycles, and (8) reduction in sawdust requirements. It was pointed out that the new design also permits, through humidity control, the "tenderizing" and "ready-cooking" processes so greatly favored today.

Among the most significant information released at the meeting was that presented by Frederic O. Hess, president, The Selas Company, Philadelphia, concerning "Important New Developments in Applying Direct Radiant Gas Heat to Ceramic Firing," and reporting upon the success of a pioneering kiln design utilized at the Lenox Pottery in Trenton, New Jersey, for firing highest quality bisque. This development, conducted jointly by Lenox, the A. G. A. Committee on Industrial Gas Research, the Public Service Electric and Gas Co., and The Selas Co., offers for the first time successful firing of high-quality ware by direct gas radiant heat at a fuel cost favorably competitive with oil.

Newly developed gas-fired refractory radiant burners stud the kiln walls in a carefully worked out pattern, and are responsible not only for exceptionally low fuel



Idea session—A group at the informal round-table meeting on Metal Treating and Melting. At right are representatives of organizations sponsoring the outstanding research project on ceramic firing, reported by Frederic O. Hess, president, Selas Company. Left to right,

standing: J. P. Leinroth, Public Service Electric & Gas Co.; C. O. Bense, Public Service Electric & Gas Co.; and John Kaufman, Allied Engineering Co. Seated: Eugene D. Milner, American Gas Association; Mr. Hess; and Dr. James Robeson, Allied Engineering Company

consumptions, but for remarkably even temperature distributions, minimum expenses in kiln construction, elimination of all saggers and muffles, and greater facility of control. Atmosphere control within the kiln is positive in view of the machine premixture of gas and air supplying the one-pipe combustion system.

Tribute was paid to the courage of the Lenox company in hazarding so much along radical lines. Leslie Brown, director of research, Lenox, Inc., discussed the installation briefly from the floor, and vouched for the advances made. Tests were also described which demonstrate the suitability of this type of kiln construction for glazing as well as bisque firing. No single reject due to firing has been made since the research kiln was placed in operation early last Fall.

"A Message from the Managing Director" of the American Gas Association was then presented to the conference by Alexander Forward. Major Forward observed that the "base" industrial gas load has increased steadily year-by-year, from a low point in 1932 amounting to 77 per cent of the 1929 figure, to a current level of 90 per cent of that figure. On top of this "base" industrial business is superimposed a large load which reflects fluctuations in business activity, and which has carried the total industrial and commercial gas sales for 1940 to a point 53 per cent above the 1929 figure.

Major Forward cautioned against the installation of "subnormal" equipment during the current war-boom rush. He expressed confidence that a minimum of such "subnormal" installations would be made, and that our industrial load gains as a result of defense activity will be thus protected to a maximum against peacetime curtailments.

Gas Man—Manufacturer Cooperation

A symposium on "Up-To-Date Cooperative Sales Methods Between Industrial Departments and Equipment Manufacturers" constituted a novel innovation at A. G. A. industrial meetings, and, under the leadership of B. H. Gardner, vice-president, Columbia Engineering Corp., Columbus, Ohio, brought expressions of opinion from the following men: Charles F. Henness, Public Service Co. of Northern Illinois, Chicago; Edward W. Mears, Mears-Kane-Ofeldt, Inc., Philadelphia; Carroll B. Mershon, The Manufacturers Light & Heat Co., Pittsburgh; O. N. Sellers, Sellers Engineering

Co., Chicago; and E. L. Stauffer, South Carolina Power Co., Charleston.

In capsule: (1) Mr. Henness does not believe the utility should sell or take commission on equipment, but should cooperate with the manufacturer as much as possible . . . that new gas-designed equipment should get the preference over conversion apparatus . . . and that better means of disseminating knowledge regarding new and improved equipment and applications are needed.

(2) Mr. Mears feels that equipment manufacturer representatives should call more regularly on gas company salesmen . . . should know gas company policies better . . . that more utility-sponsored advertising in the industrial bracket would be beneficial.

(3) Mr. Mershon believes the industrial gas engineer should have a better knowledge of the user's requirements and the various types of equipment suitable therefor . . . that cooperation between the industrial gas man and the equipment manufacturer should extend beyond the "first-call" and "tip-off" stages throughout the complete negotiation with the prospect . . . that both the manufacturer and the industrial gas department should contribute more freely to cooperative enterprises such as advertising, publicity, display, and other A. G. A. -sponsored activities.

(4) Mr. Sellers is of the opinion that prospect lists submitted to manufacturers by utilities should be more carefully investigated with regard to credit ratings and bonafide interest in new equipment . . . that all manufacturers of equipment should immediately notify utilities when competitive fuels enter the picture.

(5) Mr. Stauffer expressed the opinion that small equipment should be more aggressively promoted and standard equipment recommended wherever possible . . . that the utility should maintain a first-class service department for installed equipment . . . that manufacturers have an obligation to service the smaller territories more completely and not devote all their efforts to the larger centers.

A letter was read from William D. Thompson, manager, Industrial Department, The Laclede Gas Light Co., St. Louis, Missouri, stating that his company's general policy was to merchandise equipment up to one thousand dollars in value, and refer all larger sales leads directly to at least three manufacturers.

Enjoyable interludes between two heavy

meeting days were provided by an old-fashioned Maryland seafood dinner, an oyster-opening demonstration and raw oyster bar, and a highly successful reception in the evening staged by the industrial equipment division of the Association of Gas Appliance and Equipment Manufacturers, Frank J. Fieser, Fieser-Lundt, Inc., division chairman. At all three events, music was supplied by negroes, The Chesapeake Bay Crabbers, on trumpet, bass fiddle, sax, guitar and percussion instruments.

Everyone's Idea on 1940-41 Equipment Developments

To bring the industrial gas fraternity up-to-date on latest equipment developments, a six-way symposium of "Five-Minute Reports on Outstanding 1940-41 Industrial Gas Equipment Developments" opened the Friday morning session. Elmer B. Dunkak, vice-president, The C. M. Kemp Mfg. Co., Baltimore, described progress in increasing the temperature range of immersion heating applications by at least 300° F., so that the upper practical limit today stands at 1500° F. Specific applications for wire annealing in hot lead pans and for the heating of chemical reaction kettles were described.

Slade B. Gamble, National Machine Works, Chicago, explained new graphical methods of determining proper burner sizes and proportional mixer specifications. Herman Gehrich, Gehrich & Gehrich, Inc., Woodside, L. I., devoted his time to observations on the expanding market for convection heating up to 1000° F., covering brass shell annealing, magnesium and aluminum alloy castings ageing, and the drying and baking of cold-molded insulation parts.

Porter Hurd, Philadelphia, representing P. C. Osterman, American Gas Furnace Company, Elizabeth, N. J., described the conveniences of a new A.G.F. bell-oven furnace for all types of atmosphere heat treating. O. N. Sellers, Sellers Engineering Co., Chicago, analyzed the untapped possibilities of rubber mold heating by water under high pressure rather than by steam, noting the fuel economies, higher heating rates, reduced rejections and minimized danger resulting therefrom. Alvin M. Stock, The Partlow Corp., New York, discussed three new-type controls for special uses, recently added to his company's well-known line.

Fundamental research data bearing upon

(Continued on page 160)

A. G. A. HOTEL, RESTAURANT and COMMERCIAL SALES CONFERENCE Palmer House, Chicago

Thursday and Friday, April 24-25

New ideas galore . . . A chance to profit from the other fellow's experience . . . Case histories in commercial gas load building by advanced practices . . . Food Service Equipment Committee's report . . . A skit . . . Trends in modern food service from the restaurateur's point of view . . . Sales ideas, utilization data, research contributions, and new developments . . . Opportunity plus.

DON'T MISS IT.

THERE'S ONLY ONE SUCH CONFERENCE A YEAR!



Now that you're back from Baltimore and the 1941 A. G. A. Conference on Industrial Gas Sales, see that the rest of your department profits from what *you* learned. For instance, Carl Wierum of Brooklyn Union called a meeting of his whole industrial sales department last week for the purpose of a joint rehash. We have at Headquarters mimeographed copies of all the Baltimore papers—for you to pass along to those who couldn't hear them first hand. But, however you do it, see that your company's benefits from the Conference don't stop with the boys who rode the rattlers there and back.

We're so good we're being cited with regard to the "effective use of headline words in advertising." Prof. H. W. Hepner, College of Business Administration, Syracuse University, is doing a modern text on advertising—and requests permission to reproduce our Business Week ad, "Delivery dates a Nightmare?", as an example of smart practice. If only all our prospects went to Syracuse!

This month we give the nod to The C. M. Kemp Mfg. Co. and its 8½ by 11 direct-mail folder selling special service in process heating. Page one is an honest-to-goodness personal letter, dictated to fit the case, and signed in ink. The fold-out (2-colors) shows 12 photos, 2 drawings, and what Kemp has done "in the Ceramic Industry . . . in Chemicals . . . in Can-Making . . . and in Die-Casting"—all without too much crowding. 22 regional office addresses grace the back sheet. We've a hunch they'll be used.

INDUSTRIAL AND COMMERCIAL NATIONAL ADVERTISING FOR APRIL

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the trade and business magazines listed below during the month of April. These advertisements, which will appear in 16 publications reaching a total audience of 288,587, are prepared in cooperation with the Committee on National Advertising as a part of the Association's national advertising campaign.

General Manufacturing

BUSINESS WEEK (Apr. 5—% page)—Costs Skyrocketing? . . . offset them by the production economies of speedy, efficient GAS.

Ceramic Industry

CERAMIC INDUSTRY—"Increased efficiency, reduced spoilage with new GAS lehr"—Fenton Art Glass Co., Williamstown, W. Va.

Food Industry

FOOD INDUSTRIES—Every heat-processed food can profit by the speed, cleanliness, controllability and economy of GAS.

BAKERS' HELPER—"GAS . . . most economical and convenient fuel for baking"—Mrs. Baird's Baking Co., Houston, Texas.

Painless dentistry, a water heating problem, according to Dr. Chester J. Henschel, Sydenham Hospital. A constant flow of 85°-130° water around the victim-tooth keeps the dentin from overheating by drill friction—main reason for the "ouch." It's about time the dentist's "gas" turned a utility meter.

How about inviting a big customer to attend a gas conference or convention meeting with you when a subject to be discussed is right up his alley?

An even 100 commercial refrigeration jobs have already been installed in Brooklyn and Queens, reports Freddie Neuls of Brooklyn Union. One salesman sold 32 of the 100. As a result the company has added 20,000,000 cubic feet to the annual load. Restaurants, taverns, florists, meat markets, bakeries and delicatessens are the users—in that order. That, sirs, is what one company can do. Embarrassed?

Clip this ammunition—and fire it at the prospect: "Modern Oven Used in Finishing Electrical Appliances," **INDUSTRIAL HEATING**, October, pp. 992-8; "Hardening Small Parts Uniformly," **Reginald Trautschold, STEEL**, December 23, pp. 56-9; "Caramel Wrapping Needs Proper Air Conditioning," **John E. Hubel, CONFECTIONERS JOURNAL**, February; "Comfort Requirements for Low Humidity Air Conditioning," **F. C. Houghton, H. T. Olson, S. B. Gunst, HEATING PIPING & AIR CONDITIONING**, January, pp. 57-63.

Damp Doggerel: "Who's all wet?" says Gebby Beck . . . "My Committee on Large Water Heating . . . Has its head above water. . . In the manner it oughter. . . You'll see at the Chicago sales meeting."

Baked goods consumptions—1939 vs. 1937: White pan bread up 4½% to 7,193,826,000 lbs.; Cookies up 15% to \$19,157,000 worth; Cake up only ½ of 1% to \$195,000,000; Pie up 5% to \$75,119,000; Pastry up 37% to \$24,345,500; Doughnuts up 30% to 335,800,000 dozen. During this same period, the number of bakeries increased 7% (wholesale bakers, 3.7%; retail bakers, 4.3%; combination wholesale-and-retail establishments, 29.7%). Conclusions: (1) doughnuts are today's boom product, (2) cake is the big yet-undeveloped market, (3) the combination bakery seems to be the best bet, (4) the threat against baked goods caused by new food developments and "food fashions," and resulting in the 1933-35 low-point, seems to be stemmed. So-o-o-o, the future of the bakery gas load doesn't look half bad!

Metals Industry

THE IRON AGE (Apr. 10)—"No scale or decarburization in hard-STEEL (Apr. 7) ening Gibson Springs . . . with METAS & ALLOYS GAS"—William D. Gibson Co., Chicago, Ill.

METAL PROGRESS

INDUSTRIAL HEATING

STEEL (Apr. 28)—GAS and modern GAS equipment gives Eaton Manufacturing Co., Detroit, Mich., close temperature and atmosphere control.

Hotel and Restaurant Field

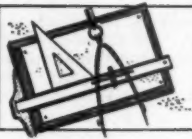
AMERICAN RESTAURANT—The decorations may bring them in BUT . . . it's the chef who brings them back—and chefs know how important modern GAS equipment is in maintaining food quality.

HOTEL MANAGEMENT—Frye Hotel, Seattle, gets better performance, greater economy with GAS cooking equipment.

CHAIN STORE AGE (Fountain and Restaurant Section)—Three food service *musts* for chain stores—and GAS does all three.

Processing Field

CHEMICAL AND METALLURGICAL ENGINEERING—From 45 minutes down to 2 . . . to bake the finish on a bicycle . . . and GAS reduces time cycles for other products, too.



Technical SECTION

D. P. HARTSON, *Chairman*

HAROLD L. GADRY, *Vice-Chairman*

A. GORDON KING, *Secretary*

Annual Distribution Conference in April Tackles Problems of National Significance

STRIKING to the heart of distribution and service problems, the eighteenth annual Distribution Conference of the American Gas Association will be held April 21-23 at the Hotel William Penn, Pittsburgh, Pa. This meeting is being held concurrently with the first annual conference of the Committee on Motor Vehicle Operation, and the two programs are complementary.

Lending added weight and significance to this year's conference, national and international developments have dictated the theme of the program—National Defense. An entire session has been set aside for a discussion of problems related to this subject with special reference to studies now under way by the Technical Section. A feature of this session will be a joint luncheon with the Conference on Motor Vehicle Operation at which Major Thomas J. Strickler, president of the American Gas Association, will be one of the principal speakers.

Following the luncheon-discussion, the



L. W. Tuttle



C. S. Goldsmith

distribution and motor vehicles groups will hold separate meetings devoted to special phases of the preparedness program.

Under the leadership of L. W. Tuttle, Public Service Co. of Northern Illinois, Oak Park, and C. S. Goldsmith, The Brooklyn Union Gas Co., chairman and vice chairman respectively of the Distribution Committee, a comprehensive program covering all phases of utility distribution work has been prepared.

A highlight of the first day's session will be an address by Clifford E. Paige, president of The Brooklyn Union Gas Company and past president of the American Gas Association. Mr. Paige is an able operating man with invaluable experience gained at international gas conferences abroad and his remarks are expected to be of outstanding interest.

An important and valuable feature of the conference will be a group of three roundtable luncheon conferences covering Appliance Servicing, Meters and Metering and Construction and Maintenance.

The final session of the conference will be held at Mellon Institute and special arrangements have been made for an inspection trip through the laboratories of this world-famed institution.

Following is the detailed program:

MONDAY

April 21, 1941—10:00 A.M.

Opening Remarks

L. W. Tuttle, Chairman, Distribution Committee.



Clifford E. Paige



A. D. MacLean



A. W. Fuller



Herman Horstman



Willbur T. Collins



W. M. Little



T. J. Perry



A. C. Cherry



M. G. Markle



L. K. Richey



George E. Woods, Jr.



R. E. Kruger

Greetings

C. E. Bennett, President, Manufacturers Light & Heat Co., Pittsburgh, Pa.

Address

Clifford E. Paige, President, The Brooklyn Union Gas Company, Brooklyn, N. Y.
Report of Subcommittee on Meters and Metering

A. W. Fuller, Chairman, Consolidated Edison Company of New York, Inc., New York, N. Y.

Industrial Metering

A. D. MacLean, Vice-President, Pittsburgh Equitable Meter Company, Pittsburgh, Pa.

Report of Subcommittee on Cast Iron Pipe Standards

H. L. Peden, Chairman, Consolidated

Edison Co. of New York, Inc., New York, N. Y.

12:30 P.M.

Joint Committee Luncheon with Conference on the Operation of Public Utility Motor Vehicles

Address

Major T. J. Strickler, President, American Gas Association.

Public Utilities in National Defense

E. P. Durfee, Consolidated Edison Co. of New York, Inc., New York, N. Y.

2:30 P.M.

Open Forum on National Defense

TUESDAY

April 22, 1941—9:30 A.M.

Report of Subcommittee on Appliance Servicing

H. G. Horstman, Chairman, Public Service Co. of Indiana, Indianapolis, Ind.

Technical Aspects of Appliance Servicing

W. M. Little, Arkansas Louisiana Gas Company, Shreveport, La.

Operating Customers' Service From Centralized Files

W. T. Collins, The Ohio Fuel Gas Company, Columbus, Ohio.

Report of Subcommittee on Pipe Joints and Pipe Materials

A. C. Cherry, Chairman, Cincinnati Gas & Electric Company, Cincinnati, Ohio.

(Continued on next page)

Operation of Public Utility Motor Vehicles To Be Studied at First Annual Conference

BREAKING ground for a newly organized but long important phase of public utility operation, the first annual Conference on Motor Vehicle Operation will take place April 21 and 22 at the William Penn Hotel in Pittsburgh, Pa., at the same time and place as the annual Distribution Conference. The two conferences are being held concurrently because of the joint interest in problems covered at both meetings.

The two-day meeting will consist of two morning and afternoon sessions devoted en-

tirely to subjects of general interest to public utility fleet operators, and particularly to the use of the motor vehicle in the gas industry. Because of the wide interest in motor vehicle operation, members of the Society of Automotive Engineers are expected to take part in the discussions.

The first chairman of the committee, Colonel O. A. Axelsson, of the Columbia Gas and Electric Corp., who laid the groundwork for the conference and later was called for military service, has been named honorary chairman.

With close attention being paid to national defense topics, the program has provided for ample discussion of current developments. Delegates to the motor vehicle meeting will join with the distribution men at a joint luncheon devoted to the defense program. Major T. J. Strickler, president of the American Gas Association, will be the headline speaker at this event.

Of special significance is the closed public utility meeting which will be held Tuesday afternoon, April 22, under the chairmanship of Jean Y. Ray of the Virginia



R. H. Clark



Col. O. A. Axelsson



E. P. Durfee



J. Y. Ray



J. M. Orr



Linn Edsall



B. D. Connor



N. P. Larsen



Errol J. Gay

Electric and Power Company, Richmond, Va. This session will discuss confidential subjects and take up the scope of the permanent committee program.

The complete program for the conference is as follows:

MONDAY

April 21, 1941—10:00 A.M.

Opening Remarks by the Chairman.

Application of Motor Transportation to the Gas Industry From the Operator's Viewpoint

A. C. Cherry, Cincinnati Gas & Electric Company, Cincinnati, Ohio.

Application of Motor Transportation to the Gas Industry From the Transportation Supervisor's Viewpoint

John M. Orr, Philadelphia Company, Pittsburgh, Pa.

12:30 P.M.

Joint Luncheon With the Distribution Conference

Address

Major T. J. Strickler, President, American Gas Association.

Public Utilities in National Defense

E. P. Durfee, Consolidated Edison Company of New York, Inc., New York, N. Y.

2:30 P.M.

Presiding—R. M. Cregar, Public Service Electric & Gas Co., Newark, N. J.

Shop Methods for Improving Gasoline Economy

Errol J. Gay, Ethyl Corporation, Detroit, Mich.

4:30 P.M.

Meeting of Committee on Operation of Public Utility Motor Vehicles

TUESDAY

April 22, 1941—10:00 A.M.

Presiding—B. D. Connor, Boston Consolidated Gas Co., Boston, Mass.

The Development of Body Design for Meter Setters' Trucks—Both Gas and Electric

N. P. Larsen, Truck Engineering Company, Cleveland, Ohio.

2:00 P.M.

Presiding—Jean Y. Ray, Virginia Electric & Power Co., Richmond, Va.

Closed Meeting for Public Utility Fleet Operators Only

Distribution Conference

(Continued from preceding page)

When To Remove Idle Gas Meters

G. E. Woods, Jr. and G. E. Garnhart, Consolidated Edison Co. of New York, Inc., New York, N. Y.

12:30 P.M.

Round Table Luncheon Conferences

Luncheon Conference No. 1—

Appliance Servicing—T. J. Perry, Chairman, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Luncheon Conference No. 2—

Construction and Maintenance—A. C. Cherry, Chairman, Cincinnati Gas & Electric Co., Cincinnati, Ohio.

Luncheon Conference No. 3—

Meters and Metering—A. W. Fuller, Chairman, Consolidated Edison Co. of New York, Inc., New York, N. Y. and H. J. Sterk, Co-Chairman, The Peoples Gas Light & Coke Co., Chicago, Ill.

WEDNESDAY

April 23, 1941—10:00 A.M.

Flamemaker

M. G. Markle, Public Service Co. of Northern Illinois, Oak Park, Ill.

2:00 P.M.

Session To Be Held at Mellon Institute
Reports of Sponsors

Reports of Luncheon Conference Chairmen
Inspection Trip Through Mellon Institute

Production and Chemical Conference To Map Gas Operating Economies

WORKING to enhance the traditional high operating efficiency of the gas industry, many prominent engineers, chemists and other gas production men will participate in the annual joint Production and Chemical Conference sponsored by the Technical Section of the American Gas Association. A three-day meeting, May 19-21, at the Hotel Pennsylvania, New York City, will be devoted exclusively to discussion of practical operating problems and technical research projects.

Again in the spotlight because of the existing national emergency, the technical men have rolled up their sleeves in a determined endeavor to make more economies in the production of gas and to make preparations for any conceivable situation. The strong down-to-earth program is designed to help place the gas industry's operating machinery in the best possible order.

The tentative program calls for the presentation at the regular sessions of at least 13 papers on a wide range of gas production and chemical subjects. In addition, there will be three luncheon conferences covering Water Gas, Carbonization and Coke, and Chemical problems. These sessions have always proved among the most popular features of the conference because of their informal atmosphere and opportunity to exchange information on many topics.

It is expected that at least one speaker will discuss subjects directly related to the gas industry's part in national defense. Plans are being made to allow sufficient time to provide opportunity for discussion of plant protection and similar defense-slanted subjects.

E. L. Sweeney, Boston Consolidated Gas Co., chairman of the Chemical Committee, and L. E. Knowlton, Providence Gas Co., chairman of the Gas Production Committee, are in charge of conference arrangements and will act as co-chairmen of the meetings. The Association's managing director, Alex-

ander Forward, will be a speaker at the first session.

Following is a tentative list of papers that will be included on the conference program:

Gas Production Committee

Progress Report on Liquefaction of Natural Gas, John A. Clark, Hope Natural Gas Company.

Experiences in Maintaining Peak Load Capacity, G. T. Bentley, Michigan Consolidated Gas Company.

Operation of Reverse Flow Carburetor Set, G. A. Steere, Portland (Me.) Gas Light Co.

Economic Position of the By-Product Coke Industry, R. A. Sherman, Battelle Memorial Institute.

Combustion Characteristics of Coke, M. A. Mayers, Carnegie Institute of Technology. Coal for Coking, J. D. Doherty, Koppers Coal Company.

Liquid Purification with Ammonia, L. B. Bowman, Rochester Gas and Electric Corp.

Chemical Committee

Determination and Examination of Light Oils in Gas, W. L. Glowacki, Mellon Institute.

Developments in Foundry Coke and Foundry Coke Practice, D. J. Reese, International Nickel Corp.

Recent Developments in Water Conditioning Technique, R. E. Hall, Director, Hall Laboratories, Inc.

Changes in Composition of Gases in Contact with Soil, J. F. Anthes, The Brooklyn Union Gas Company.

Maximum Pressures Developed During Carbonization, Dr. A. W. Gauger.

Gas Conditioning Committee

Economic Utilization of Raw Materials in Production of Mixtures of Coke Oven Gas, Producer Gas and Water Gas, R. E. Kruger, Rochester Gas and Electric Corp.



Insulation—An Effective Tool

Laboratories' Research Shows Improvements in Water Heater Performance by Proper Selection of Insulating Materials

By MILTON ZARE
American Gas Association
Testing Laboratories

REMARKABLE progress has been made in recent years in designing automatic storage type gas water heaters. During the last ten years their general service efficiency has increased nearly 25%, to say nothing of other improvements which have made them more desirable. Contributing to the high level of performance of contemporary models on the market has been the availability of new insulating materials and methods for employing them more effectively.

Back of this progress are continuous efforts of water heater manufacturers to improve their products to the fullest extent. Supplementing these endeavors the American Gas Association during the last five years has sponsored a broad program of fundamental research on gas appliances, including water heaters. This work has been conducted at its Testing Laboratories in Cleveland under supervision of the Association's Committee on Domestic Gas Research headed by F. J. Rutledge. This group is assisted by a Technical Advisory Committee of Manufacturers on Domestic Gas Water Heating Research of which L. R. Mendelson is chairman.

Water Heating Data Published

Results of these studies have now been made available to the entire industry through publication of Bulletin No. 9, "Fundamentals of Domestic Gas Water Heating." This bulletin represents the first comprehensive and authoritative technical data published on this subject. Original data presented therein have already been employed by gas appliance manufacturers and gas engineers to considerable advantage. Further studies on factors affecting the heating and storage of water are now in progress.

One of the major problems undertaken in research on domestic gas water heaters was a comprehensive study of heat losses occurring in their normal use. Due to their continuous operation, automatic storage gas water heaters present a rather unique problem. Heat losses from approved storage vessels represent a comparatively small portion of the total heat required for raising the stored water to the temperature desired. However, they become magnified by continuous operation. Therefore, it is highly desirable to reduce them as much as possible. Such losses are primarily a function of heat transmission capacities of exterior surfaces of the heater. These are readily modified

through the use of suitably selected insulation.

There are many kinds of insulating materials available on the market. Some of the most commonly used are listed in Table 1. Obviously, some of them are unsuitable for use on water heaters due to their physical state. Since published heat transmission coefficients (shown in Table 1) are available for practically all commercial grades of insulating materials, these factors have

been correlated as to their insulating effectiveness. On this basis, the best types of solid insulation for gas appliances may be classified as non-inflammable materials having published heat transmission coefficients of 0.27 B.t.u. per hr. per sq. ft. per °F. per in. or lower. Representative types of such materials are siliceous wool (rock wool, mineral wool, slag wool) and glass wool. Inflammable materials with the same degree of conductivity are comparable. However, they must be employed judiciously bearing in mind operating temperatures at the point of application. Materials such as laminated asbestos, expanded mica, and diatomaceous earths, having heat transmission

TABLE 1
COMPARISON OF THERMAL CONDUCTIVITIES OF VARIOUS INSULATING MATERIALS

Material	Density Lb./Cu.Ft.	Conductivity B.t.u./Hr./Sq. Ft./°F./In.	Heat Loss Factor* B.t.u./Hr./°F.
Chemically treated wood fibres held between layers of strong paper	3.62	0.25	....
Other vegetable or animal fibres in blankets similar to above, typical value . . . . .	....	0.27	....
Compressed peat moss	11.00	0.26	....
Other semi-rigid animal and vegetable fibres, typical values . . . . .	....	0.26-0.32	....
Ceiba fibres	1.90	0.23	....
Ceiba fibres	1.60	0.24	....
Dolomite and silica fibre	1.50	0.27	....
Diatomaceous earth powder	10.6	0.31	....
Slag fibre	9.40	0.27	....
Glass wool	1.50	0.27	[6.09 (1.5) 5.5 (2.5)]
Silicate of lime and alumina (granular)	4.20	0.24	....
Expanded aluminum—magnesium silicate, granular	6.20	0.32	6.9 (7.5)
Mineral wool, all forms, typical . . . . .	....	0.27	5.43 (9.9)
Regenerated cork	8.10	0.32	....
Rock wool	21.00	0.30	6.36 (21.0)
Rock wool	18.00	0.29	6.10 (18.0)
Rock wool	14.00	0.28	5.80 (14.0)
Rock wool	10.00	0.27	5.43 (10.0)
Sawdust	12.00	0.41	....
Shavings, various	8.80	0.41	....
Shavings, maple, beech, and birch	13.20	0.36	....
Corrugated asbestos (4 plies per in.) . . . . .	....	0.53	....
Corrugated asbestos (8 plies per in.) . . . . .	....	0.37	....
Redwood bark	3.00	0.31	....
Corkboard, range . . . . .	....	0.25-0.32	....
Fiberboard, range . . . . .	....	0.28-0.51	....
Air space, faced one side with bright aluminum, over ¾ in. wide . . . . .	....	0.46†	7.24

*Heat loss factors for ¾ in. thickness from test data (figures in parentheses indicate densities).

†Conductance per inch thickness of cell.

coefficients ranging from 0.27 to 0.32 B.t.u. per hr. per sq. ft. per °F. per in. are less effective insulators. They have in certain applications a compensating advantage resulting from the ease with which they may be applied.

Metal foil insulators, as well as dead air spaces, were also studied in this investigation for comparative purposes. Their heat transmission coefficients, however, are higher than 0.32 B.t.u. per hr. per sq. ft. per °F. per in. and they are therefore relatively least effective. With the wide variety of low-cost insulating materials avail-

able having low conductivity factors, and other desirable qualities, it would be difficult to justify use of any having a heat transmission coefficient appreciably greater than 0.32 B.t.u. per hr. per sq. ft. per °F. per in.

This classification of insulating materials is based on the assumption that loose materials are employed at their optimum densities and at the same thicknesses. The effect of changes in density on heat loss, here considered as the weight of 1 cu. ft. of material rather than the true density, is illustrated in Figure 1 for three types of ma-

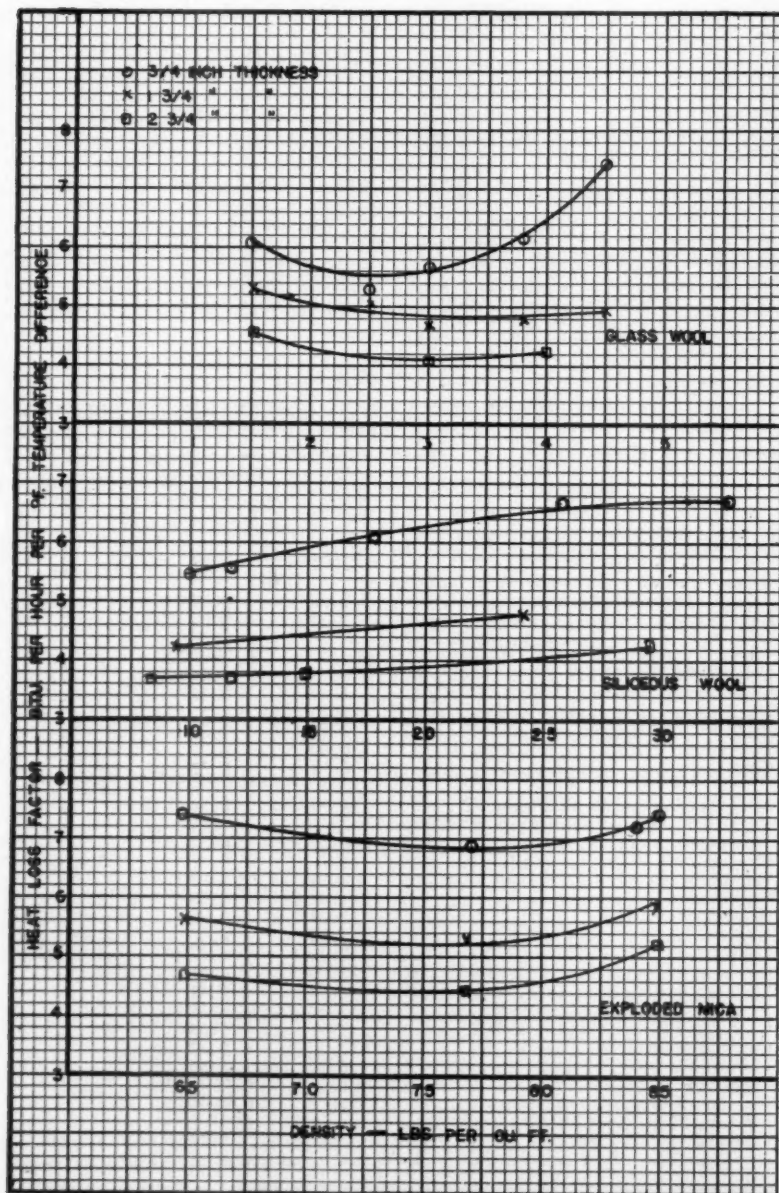


Figure 1—Effect of varying densities and thickness of insulation on heat losses

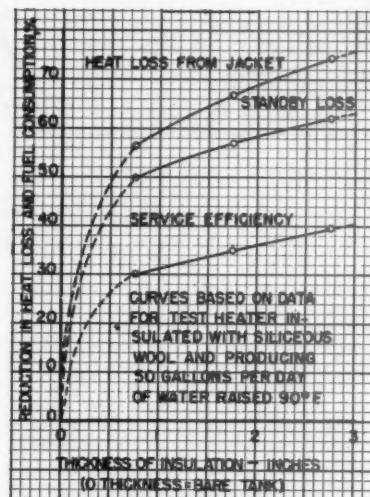
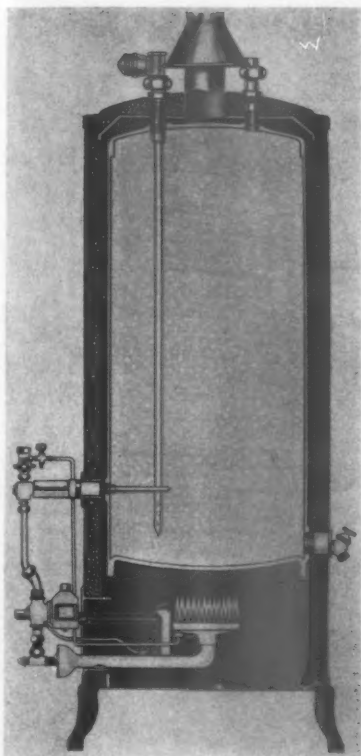


Figure 2—Effect of increasing insulation thickness on heat losses

terials. Curves for siliceous wool follow the generally accepted theory that effectiveness increases as density decreases. Although this holds equally true for glass wool and exploded mica, these materials could not be packed so that they would remain uniform at their lower densities. Consequently, increases in observed heat losses were obtained. It is important, therefore, in applying such loose insulating materials as glass wool to employ a density at which settling will not occur despite the fact that the density selected may be higher than that providing maximum insulating value. Thus, the term "optimum density" as used in this article applies to the minimum density at which settling does not occur from normal handling of an insulated heater.

All loose insulating materials have a tendency to settle. The extent of settling increases with the height of the column of insulation and with decreasing densities for fibrous materials. With granular materials, the particle size rather than density seems to be the controlling factor. Settling is apparently independent of thickness. The same degree of settling occurred with different thicknesses in the Laboratories' studies. To determine the minimum density required to prevent settling under reasonable conditions of shipping and handling, a simple method has been developed. This should be of considerable interest to all manufacturers. In brief, it consists of dropping an insulated water heater or test chamber through a distance of 1/2 in. fifty times. This operation was found to produce settling comparable to that obtained by shipping and final installation of a unit. When using this method, the desired density is taken as the final weight of compressed insulation per cubic foot. If no settling occurs, it must be remembered that the initial density may be sufficiently high to resist settling under reasonable conditions of handling.



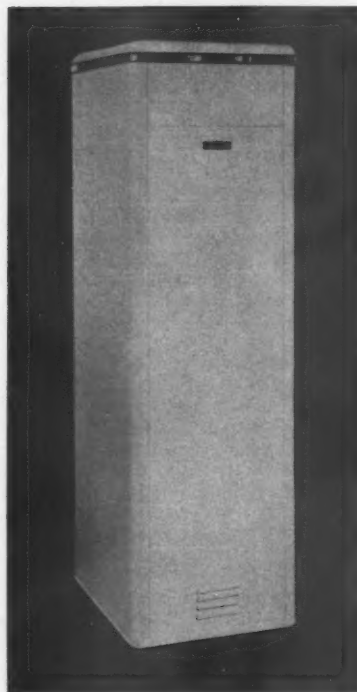
Cross-section view of standard automatic storage gas water heater

The relative importance of selecting suitable densities is revealed in a test conducted on a water heater approximately 5 ft. high selected for the purpose. A standby loss test was conducted on this heater before and after the insulation was settled by handling so as to expose approximately 5 in. of the height of the boiler at the top. It was found that standby loss was thus increased by nearly 10 per cent due to the amount of settling noted.

As shown in Figure 1, the effect of thickness also follows the generally accepted theory on insulation materials. Namely, insulating effectiveness increases as thicknesses are increased. When comparative results by increasing thicknesses are considered, as may be noted in Figure 2, it is evident that the first inch of thickness produces the greatest effect. This thickness of insulation of a given density reduced the heat loss from the test water heater jacket 60 per cent below that resulting without the use of jacket and insulation. The second inch reduced the heat loss nearly 69.5 per cent below that with no insulation and the third inch 76 per cent. Each additional inch represented increments of 9.5 and 6.5 per cent, respectively. This decrease in effectiveness is further substantiated by other operating characteristics of the water heater studied, also shown in Figure 2. Thus, for normal use, merely increasing insulation

TABLE 2
HEAT LOSS FACTORS OF VARIOUS INSULATING MATERIALS AT OPTIMUM DENSITIES

Grouping	Type of Material	Heat Loss Factors for Thicknesses Indicated—B.t.u./Hr./°F.		
		¾ In.	1¼ In.	2¼ In.
1	Siliceous Wool (Rock or Mineral).....	5.43	4.23	3.72
	Glass Wool.....	5.25	4.71	4.08
2	Laminated Asbestos (8 plies per in.).....	6.59	5.23	4.63
	Expanded Mica (medium).....	6.91	5.31	4.48
3	Exploded Mica (Coarse and Fine).....	7.43	5.67	4.67
	Corrugated Asbestos (4 plies per in.).....	7.34	5.81	5.16
4	Metal Foil on Corrugated Paper.....	7.50	7.50	7.64
	Metal Foil on Jacket.....	7.24	8.80	8.28

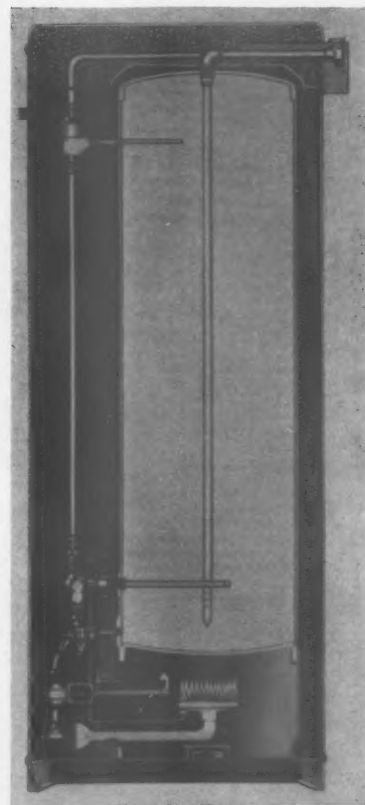


Exterior view of modern cabinet type automatic storage water heater, cross section of which is shown below

thickness of the medium described is not necessarily economically justified. Similar curves could be made for each insulating material, in which the economical limit of thickness could be determined. Where fuel costs are very high, or where it is unnecessary to justify fully increased investment by resulting operating economies, exception to the above statement can be made.

To indicate the relation between thickness and density of insulating materials for gas water heaters, Table 2 was prepared. This shows several common materials in the order of decreasing insulating values on the basis of heat loss factors in B.t.u. per hr.

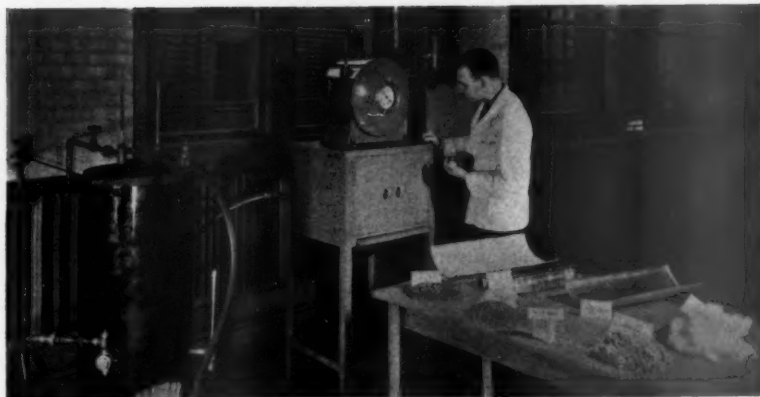
per °F. difference in temperature of the heated medium and room temperature. While little significant difference is noted in the heat loss factors for any one grouping of these materials at a given thickness and optimum density, a marked effect may be exerted by different insulating mediums on operating characteristics, as is shown in Figure 3. For example, heat loss factors



Cross-section view of modern cabinet type automatic storage gas water heater, illustrating effective insulation of tank and enclosure of controls in still air space

of siliceous wool and corrugated air-cell asbestos (4 plies per in.) were 4.23 and 5.81, respectively, for $1\frac{3}{4}$ in. thicknesses. Selecting from Figure 3 service efficiencies corresponding to these heat loss factors and making the necessary calculations, it is found that for an average delivery of 50 gallons of hot water (raised 90° F.) per day, the difference in monthly gas consumption would be nearly 395 cu. ft. of 530 B.t.u. manufactured gas less for siliceous wool than for corrugated air-cell asbestos. By the same method of calculation, it may also be shown that $2\frac{3}{4}$ in. of corrugated air-cell asbestos with a heat loss factor of 5.16 is slightly more effective than $\frac{3}{4}$ in. of siliceous wool. In this instance, the difference, however, is negligible.

In addition to selection of proper type, thickness, and density of insulation materials, parts of a heater not ordinarily insulated present an important consideration for reducing heat losses from exterior surfaces. Such parts as inlet and outlet water connections, flue pipe, thermostat, and other controls on a water heater, as well as constructional connectors to the jacket which afford metal-to-metal contacts, have a considerable effect on total heat losses. It is estimated that elimination of these sources of heat loss should theoretically decrease such loss approximately 50 per cent. Although elimination of metal-to-metal contacts are limited by the design of a unit, it is an important corollary of proper use of insulation. Among common devices effectively employed for this purpose are non-metallic bushings where such contacts ordinarily occur. In line with the modern trend for completely enclosing all controls of a heater within the jacket, the still air



Equipment and samples of materials employed during insulation studies on domestic gas water heaters

space formed by the enclosure also serves as an effective insulating medium.

Since even a small amount of water practically eliminates the effectiveness of insulating materials, it is essential that means be provided to protect insulation from moisture that may be absorbed from flue products or from the outer air. This is particularly true with water heaters which, due to their normal operation characteristics, do not provide conditions for drying wet insulation. Materials employed in the Laboratories' investigations were commercially dry as purchased on the market. On the basis of a supplementary investigation to determine the effects of humidity on operating characteristics of such appliances, it was concluded that present-day methods for sealing

insulating materials from such moisture are satisfactory. Twelve automatic storage water heaters were operated for 15 days in a test room in which nearly 100 per cent humidity was maintained at an average room temperature of 100° F. At the end of this period, no detrimental effects were observed as a result of excessive humidity.

An important consideration in selecting satisfactory insulating materials from the manufacturer's standpoint is the ease of application of such materials to the unit. Obviously, where cost of application is less, greater thicknesses may be employed than in the case of materials requiring more labor or having a higher initial cost. As a result, different forms of insulating materials have been made available to facilitate their use. Granular materials may be simply poured into the space provided for insulation. In this instance, as well as for other loose materials, consideration must be given to their settling characteristics. Long fibrous materials are available in blankets of various thicknesses and densities, and may be wrapped around the water heater tank. In addition, use of combinations of different types of materials have been employed very successfully.

Water Heater Efficiency

In the last analysis, optimum efficiency of a water heater can only be obtained when all heat losses are minimized to the fullest possible extent consistent with material and production costs and design limitations. With correct evaluation of types, thicknesses, and densities, considerable leeway exists in selection of the most suitable insulating material for a given construction. Changes in type of material selected can readily be compensated to obtain comparable operating efficiencies by changes in density or thickness employed, or both. If optimum operation and efficiency are desired, the salient factors discussed in this paper should be given full consideration. They are summarized below:

1. Employ types of insulating materials having heat transmission coefficients not

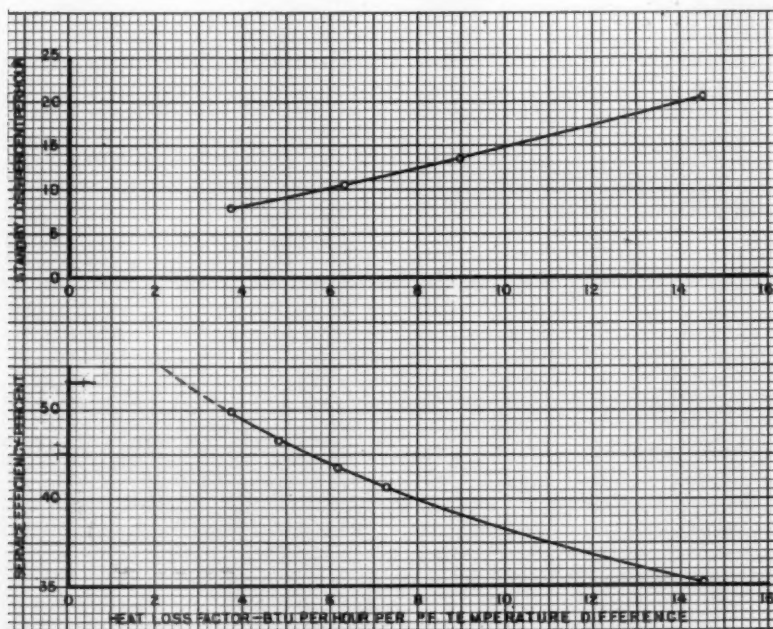


Figure 3—Relationship between heat loss factors, standby loss, and service efficiency

- greater, and preferably lower, than 0.32 B.t.u. per hr. per sq. ft. per °F per in.
2. Select increased thicknesses of insulation up to 3 in., and higher, where the additional cost of the heater is offset by savings in operating costs.
 3. Pack loose materials to the minimum densities required to prevent settling.
 4. Insulate parts not ordinarily insulated and minimize or eliminate where possible metal-to-metal contact between storage vessel and exterior surfaces of the heater.
 5. Provide proper protection of insulation materials against humidity in flue products or air which might be absorbed in the material and reduce its effectiveness.

The technical data discussed in this paper are wholly confined to one phase of the heat loss problem, namely, to such losses which can be minimized by judicious selection of insulating materials. Many other related factors, all of importance, must also be given full consideration in preventing loss of heat from stored water. For further information on this subject American Gas Association Bulletin No. 9, "Fundamentals of Domestic Gas Water Heating" is highly recommended.

Laboratories' Engineers Take New Positions

DURING the month of November two engineers resigned from the American Gas Association Testing Laboratories to take up new duties in the gas industry. L. L. Rice joined the H-M Thermo Control Company of Los Angeles, as engineer, and Gordon L. Walther became associated with the Hammel Radiator Corporation of Los Angeles, in the same capacity. Both engineers during their service with the Testing Laboratories received thorough training in testing different types of gas appliances. This experience should afford them excellent backgrounds for their new responsibilities.

Mr. Rice was originally employed at the Cleveland Laboratories. After two years spent in their Testing Department, he was transferred in April, 1940, to the Pacific Coast Branch. His previous training was at Oregon State College where he received his degree in mechanical engineering.

Prior to joining the Laboratories, Mr. Walther spent two years with the Mastodon-Black Diamond Oil Company as testing engineer, and one year with the Pacific Associated Companies in design work. Mr. Walther received his degree in mechanical engineering at the University of Southern California.

A third engineer, T. Edward Othman, was called for service in the United States Army on February 10, 1941. He is the first member of the Pacific Coast Branch to report for military service. He has been assigned as a First Lieutenant in the 604th Camouflage Warfare Division at Fort McArthur, San Pedro, California. Following

two years in the Testing and Inspection Departments at the Cleveland Laboratories, Mr. Othman was transferred to the Pacific Coast Branch in April, 1940. His previous training was at Oregon State College where he received a degree in mechanical engineering.

The total number of engineers who have resigned from the Cleveland and Los Angeles Laboratories during the current fiscal year now amounts to 19. Nine have taken other positions in the gas industry and 4 outside it. The 6 remaining are serving in the United States Army. Two were formerly Reserve Officers, three were drafted and one enlisted.

1942 Standards Distributed to Manufacturers

ON March 15, 1941, three sets of requirements becoming effective on January 1, 1942, were distributed to interested manufacturers. These requirements were approved by the A.S.A. Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee at its December 13, 1940, meeting. They include new approval standards for portable gas baking and roasting ovens and listing requirements for furnace temperature limit controls and fan controls. Completing this group are revised requirements for semi-rigid gas appliance tubing and fittings.

As their name implies, Approval Requirements for Portable Gas Baking and Roasting Ovens include within their scope commercial baking and roasting ovens of the stationary deck type that are portable as a unit. These specifications are designed to insure proper construction and performance of equipment of this kind. Similarly, Listing Requirements for Furnace Temperature Limit Controls and Fan Controls are the first of a series of specifications prepared for automatic controls on modern central house heating gas appliances.

Availability of such devices tested and approved by the Laboratories and listed in their Directory of Approved Gas Appliances and Listed Accessories will enable

manufacturers to select those best suited for their particular needs. American Standard Listing Requirements for Semi-Rigid Gas Appliance Tubing and Fittings have been brought up to date with new developments and improvements for this type of equipment.

As usual, these standards are being distributed to interested manufacturers well in advance of January 1, 1942, when they become effective. Any manufacturers desiring to do so may submit equipment for test for compliance with them in advance of that date. Certificates of Approval or Listing for such models will be dated as of January 1, 1942. Further information may be obtained by addressing the American Gas Association Testing Laboratories.

Connelly Photo Contest

CONNELLY Iron Sponge & Governor Company, manufacturer of gas purifying equipment, is offering 17 cash prizes amounting to \$255 for the best photographs of the company's products in use, and a grand prize of \$100 in cash. Limited to employees of gas companies and members of their families, the contest started March 1, 1941, and ends June 30, 1941.

Contestants may enter as many prints as desired, although all prints must not be smaller than 2¼ by 3¼ inches. The contest is confined to black and white photographs only. All entries and communications should be addressed to the company at 3154 S. California Avenue, Chicago, Ill.

The contest is being directed by R. W. Stafford, Connelly engineer, who for many years was industrial engineer for The Peoples Gas Light & Coke Co., Chicago.

Koppers Plans Enlarged Research Program

THE creation of new and improved chemicals from coal, a wide and fruitful frontier of modern industrial chemistry, is receiving attention by Koppers Company, of Pittsburgh, as a result of expanded research activities at Mellon Institute of Industrial Research and at Koppers' own laboratories. The research staff has been increased to 67 during the past year and will be enlarged to about 100 during 1941.

The basic purpose of this enlarged research program is to take Koppers Company into the production of refined chemical products, considered a logical step for a corporation long engaged in the development and large-scale manufacture of coke, gas, tar, light oils, and derived crude chemicals. These products have found their way into practically every industry in the land, for application in their existing form or for further processing.

All research activities are organized under the direction of Fred Denig, vice-president of Koppers Company and director of the Koppers Research Department.



Courtesy Public Utilities Fortnightly
"The commission says we must put an odor in the gas anyhow—so why not experiment?"

Defense Projects Use Gas Refrigerators

SEVERAL thousand gas refrigerators have been ordered by the United States Government for use in defense and slum clearance projects all over the country.

For example, at Corpus Christi, Texas, 251 gas refrigerators have been ordered for apartments of non-enlisted personnel on the new government naval base there. Ninety-eight are scheduled for workmen of the Rock Island government arsenal living there.

Among the housing projects in which gas refrigerators have been installed or ordered are:

Boston, Mass., two projects, 1964 refrigerators; Carmelitos, Calif., 608; Birmingham, Ala., 863; Mobile, Ala., two projects, 399; Tampa, Fla., three projects, 1084; Huntington, W. Va., three projects, 500; El Paso, Texas, two projects, 662; Los Angeles, Calif., 302; Fall River, Mass., 357; Charleston, W. Va., two projects, 477; St. Petersburg, Fla., 243; Ft. Lauderdale, Fla., 150.

Industrial Gas Conference

(Continued from page 150)

the combustion of gas with a deficiency of air, upon atmospheric burner design, and upon methods of calculating flue losses from industrial atmosphere furnaces, were presented by William R. Teller, chief testing engineer, A. G. A. Testing Laboratories, Cleveland, Ohio. His paper, "Newly Developed Technical Information of Value in Applying Industrial Gas," employed thirteen graphical slides to visualize the technical relationships which were discussed. In all cases, data were sufficiently generalized so that they could be employed in making operating analyses on almost any type of furnace installation. Reference was made to the new A. G. A. Industrial Research Bulletins Nos. 10 and 11, reporting, respectively, for the A. G. A. Committee on Domestic Gas Research and the A. G. A. Committee on Industrial Gas Research.

Ten Types of Utility Direct-Mail Analyzed

Contending that "barring occasional special meetings, demonstrations, floor displays and stunts, the industrial gas sales department's only steady reliable way of advertising specifically to the industrial and commercial customers and prospects in its territory, is through the machinery provided by Uncle Sam and the Postmaster General," Harry W. Smith, Jr., director, industrial gas publicity, American Gas Association, classified into ten types the direct-by-mail techniques employed today by gas utility companies in behalf of non-residential sales.

Actual examples of work in each bracket were presented on handsome displays, along with data secured from the user companies with regard to (1) the conditions under which each type of direct-by-mail is especially helpful, (2) what the industrial and commercial gas sales department can do

in planning and preparing each type so that it has greatest sales effect, (3) what follow-up is advisable, (4) what, in general, the type of direct-by-mail in question costs, and (5) what results may be expected.

Mr. Smith's concluding thought in discussing "The Part Industrial Men Can Play in the Most Effective Use of Sales Promotional Material" was that the three fundamental "musts" which insure success with direct-by-mail advertising (fitting the piece to the product, the prospect and the expectable load; building complete and accurate lists and checking them; and following up each mailing) are all up to the industrial sales department—not the printer, not the advertising agency, nor even the utility advertising department.

Records are not available at this time of the comments made by Clinton Lee Folmer, Consolidated Gas Electric Light & Power Co. of Baltimore, chairman of the A. G. A. Rate Committee. His address will be reported, however, on these pages next month.

Similarly, the deliberations of the three Round-Table Information Sessions, held Friday afternoon and concerning, respectively, (1) the problems faced by the in-

dustrial sales manager, (2) the metal treating and melting field, and (3) gas air conditioning, with particular reference to new industrial applications and combination installations, will be reported in a forthcoming issue.

Theodore R. McKeldin, well-known public figure and attorney in Baltimore and nationally recognized inspirational speaker, enthralled the Friday luncheon crowd with his analyses of "The Five Nations"—combination, determination, imagination, resignation, and coronation.

The high caliber of the meeting resulted from the collective work of the officers of the A. G. A. Industrial and Commercial Gas Section and the Committee on Program and Arrangements, Lawrence E. Biemiller, Consolidated Gas Electric Light & Power Co. of Baltimore, chairman. The Industrial Equipment Division of the A.G.A.E.M., Frank J. Fieser, chairman, organized and conducted reception and entertainment features at the Industrial Gas Equipment Club. Charles C. Krausse, assistant manager, industrial sales, Consolidated Gas Electric Light & Power Co. of Baltimore, made possible inspection trips in and about Baltimore before and after the conference.

Personnel Service

SERVICES OFFERED

Industrial gas sales and utilization: Specialist, with over 23 years experience, covering manufactured and natural gas, and ranging from open hearths to bakery ovens. Chemical engineer with masters degree. Diverse experience includes market surveys to the selection of equipment for applying gas to the broadest range of uses. 1406.

Representation for a good quality merchandise desired by man who has had a number of years experience in all branches of the gas business. Prefer representation where both salary and commission will be paid and where appointments can be made in advance. Can furnish A-1 references. 1407.

Fourteen years' experience as manager of manufactured gas properties desires position as **manager or superintendent** in gas utility field. Wide experience in sales promotion and public relations work. Thoroughly familiar with all phases of coal and water gas operation. Available now. 1408.

Experienced Salesman, 35, engineering education, proven sales record, executive ability. Experienced supervising sales, service and installation of househeating hotel and restaurant, commercial and industrial uses of gas. At present employed in natural gas city of 65,000. Interested in sales position with gas company or equipment manufacturer. 1409.

Distribution Superintendent or Engineer (36) extensive experience with leading natural and manufactured gas properties on construction, operation and educational activities; B. S. and M. S. degrees in engineering; excellent references; employed but desire change with more possibilities. 1410.

Customer Accounting Specialist—twenty years' experience in the utility field—on operating properties and in service organizations. Five years' specialized experience on billing installations, meter reading re-routing, service application routine and collection procedure. Available for either permanent position or special assignments. 1411.

Service man, (32) now employed by large utility corporation in the house heating and water heating gas appliance division, desires position with manufacturer as field contact man or in line with type of work. Also have knowledge of electrical thermostatic controls and all types of house heating systems. 1412.

SERVICES OFFERED

Plant Superintendent: Twenty-seven years of thorough experience in gas plant operation. For the past thirteen years in complete charge of operation and maintenance of medium size water gas plant. Family man. Weight 160. Age 44. Best of references. 1415.

Man exceptionally qualified to head industrial department of large utility, to serve a combustion engineering concern, or large consumer. Experienced in market surveys, sales promotion, consulting with consumers on utilization. Authority on relative merits of fuels. Writes clearly, in non-technical style. Resourceful—friendly. Registered professional engineer, N. Y. and Pa. 1416.

Gas Engineer, twelve years' experience in gas utilization. Activities at present mostly on residential usage but experience includes commercial and industrial utilization. Co-operative and active on gas association committee work, including sales, service technical and appliance servicing. Fast accomplishments made on promotion of gas utilization and reduction of service costs. 1417.

Rate Engineer, for past twelve years staff engineer with engineering consultants prominent in public utility field. Thoroughly experienced in rate research including rate design and application, rate case data, commission negotiations, valuations, original cost, property records, cost analyses, economic and financial studies, investigations, management problems. College graduate, 36, married. 1418.

POSITIONS OPEN

Sales Agents to represent well-known manufacturer of gas space heating equipment. Territories open in Nebraska, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Missouri, New York State, and Western Pennsylvania. Exclusive territory protection, no objections to man selected handling non-competitive line, remuneration straight commission. State detailed qualifications in application. 0355.

Wanted: Man with sales ability and able to make a small investment in an internationally known gas appliance on the market for twenty years. Must be able to take full charge of sales. 0361.

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